

COUNTY COUNCIL
OF
HARFORD COUNTY, MARYLAND

BILL NO. 01-36

Introduced by Council President Hirsch at the request of the County Executive

Legislative Day No. 01-32

Date November 6, 2001

AN ACT to repeal and reenact, with amendments, Subsection A(2), Chesapeake Bay Critical Area Management Program, of Section 169-1, Adoption; legal status, of Chapter 169, Master Plan, of the Harford County Code, as amended; to provide for changes to the Chesapeake Bay Critical Area Management Program; and to further provide that the Chesapeake Bay Critical Area Management Program, along with all maps and appendices as enacted by Bill 00-55, remains in all other respects unchanged; and generally related to the Chesapeake Bay Critical Area Management Program.

By the Council, November 6, 2001

Introduced, read first time, ordered posted and public hearing scheduled

on: December 4, 2001

at: 7:45 p.m.

By Order: James E. Massey, Jr., Council Administrator

PUBLIC HEARING

Having been posted and notice of time and place of hearing and title of Bill having been published according to the Charter, a public hearing was held on December 4, 2001 and concluded on, December 4, 2001

James E. Massey, Jr., Council Administrator

EXPLANATION: CAPITALS INDICATE MATTER ADDED TO EXISTING LAW. [Brackets] indicate matter deleted from existing law. Underlining indicates language added to Bill by amendment. Language lined through indicates matter stricken out of Bill by amendment.

Section 1. Be It Enacted By The County Council of Harford County, Maryland that Subsection A(2), Chesapeake Bay Critical Area Management Program, of Section 169-1, Adoption; legal status, of Chapter 169, Master Plan, of the Harford County Code, as amended, be and it is hereby repealed and reenacted, with amendments, all to read as follows:

Chapter 169. Master Plan

§ 169-1. Adoption; legal status.

A. 1996 Master Plan. The 1996 Master Plan, dated July 2, 1996, as adopted by County Council Bill 96-28, is hereby declared to be the Official County Master Plan.

[(2) Chesapeake Bay Critical Area Management Program. The attached Chesapeake Bay Critical Area Management Program, as enacted by Bill 97-7, along with all maps and appendices, including the amended Land Use Management Area Maps, is incorporated herein by reference as part of this chapter as though it were fully stated herein, and the Chesapeake Bay Critical Area Management Program is hereby declared to be part of the Official Harford County Master Plan.]

(2) CHESAPEAKE BAY CRITICAL AREA MANAGEMENT PROGRAM. THE ATTACHED CHESAPEAKE BAY CRITICAL AREA MANAGEMENT PROGRAM, AS ENACTED BY BILL 00-55, ALONG WITH ALL MAPS AND APPENDICES, INCLUDING THE AMENDED LAND USE MANAGEMENT AREA MAPS AS ENACTED BY BILL 00-55, IS INCORPORATED HEREIN BY REFERENCE AS PART OF THIS CHAPTER AS THOUGH IT WERE FULLY STATED HEREIN, AND THE CHESAPEAKE BAY CRITICAL AREA MANAGEMENT PROGRAM IS HEREBY DECLARED TO BE PART OF THE OFFICIAL HARFORD COUNTY MASTER PLAN.

Section 2. And Be It Further Enacted that this Act shall take effect 60 calendar days from the date

1 it becomes law.

EFFECTIVE: February 19, 2002

*The Council Administrator does hereby certify that
fifteen (15) copies of this Bill are immediately available for
distribution to the public and the press.*


Council Administrator

BILL NO. 01-36HARFORD COUNTY BILL NO. 01-36Brief Title) Chesapeake Bay Critical Area management Program

is herewith submitted to the County Council of Harford County for
enrollment as being the text as finally passed.

CERTIFIED TRUE AND CORRECT**ENROLLED**

James E. Massey, Jr.
Administrator

[Signature]

Date 12-18-01Date 12/18/01**BY THE COUNCIL**

Read the third time.

Passed: LSD 01-38 (December 18, 2001)Failed of Passage: [Signature]

By Order

James E. Massey, Jr.
Council Administrator

Sealed with the County Seal and presented to the County Executive for
approval this 19th day of December, 2001, at 4:00 p.m.



James E. Massey, Jr.
Council Administrator

BY THE EXECUTIVE

[Signature]
COUNTY EXECUTIVE

APPROVED:

Date 12-21-01**BY THE COUNCIL**

This Bill (No. 01-36), having been approved by the Executive and returned to the Council, becomes
law on December 21, 2001.

James E. Massey, Jr.
Council Administrator

Effective Date: February 19, 2002

BILL NO. 01-36

HARFORD COUNTY CHESAPEAKE BAY CRITICAL AREA MANAGEMENT PROGRAM

HARFORD COUNTY

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County Council of Harford County

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CHAPTER 1

INTRODUCTION TO HARFORD COUNTY'S CHESAPEAKE BAY CRITICAL AREA PROGRAM

Harford County's Critical Area Program was developed in response to the Chesapeake Bay Initiatives enacted by the State of Maryland. In particular, the Chesapeake Bay Critical Area Act of 1984, as amended, and the Chesapeake Bay Critical Area Program Development Criteria approved by the General Assembly in 1986 guided the development of the Critical Area Program. The Chesapeake Bay Critical Area Act was adopted in recognition of the many findings of the Chesapeake Bay Initiative.

Among these findings were that the Chesapeake Bay and its tributaries are natural resources of great significance to the State and the nation. The shoreline and adjacent lands constitute a valuable, fragile, and sensitive part of this estuarine system, where human activity can have a particularly immediate and adverse impact on water quality and natural habitats. The capacity of these shoreline and adjacent lands to withstand the continuing demands upon them, without further degradation to water quality and natural habitats is limited.

National studies have documented that the quality and productivity of the waters of the Chesapeake Bay and its tributaries have declined due to the cumulative effects of human activities that have caused increased levels of pollutants, nutrients, and toxics in the Bay System and declines in more protective land uses such as forestland and agricultural land in the Bay region.

Those portions of the Chesapeake Bay and its tributaries within Maryland are particularly stressed by the continuing population growth and development activity concentrated in the Baltimore-Washington metropolitan corridor. The quality of life for the citizens of Maryland is enhanced through the restoration of the quality and productivity of the waters of the Chesapeake Bay and its tributaries.

Restoration of the Chesapeake Bay and its tributaries is dependent, in part, on minimizing further adverse impacts to the water quality and natural habitats of the shoreline and adjacent lands. The cumulative impact of current development is inimical to these purposes. There is a critical and substantial State interest for the benefit of current and future generations in fostering more sensitive development activity in a consistent and uniform manner along shoreline areas of the Chesapeake Bay and its tributaries so as to minimize damage to water quality and natural habitats.

To address these findings, the Act required local governments to develop detailed management programs for those areas within 1000 feet of tidal waters and tidal wetlands and any additional areas that the local jurisdiction deemed important to carry out the purposes of the Act.

GOALS AND OBJECTIVES

The goals and objectives of Harford County's Local Critical Area Management Program are:

- to minimize adverse impacts on water quality that result from pollutants being discharged from structures, or that have runoff from surrounding lands;
- to conserve fish, wildlife and plant habitat; and
- to establish land use policies for development in the County's Chesapeake Bay Critical Area that accommodate growth, but acknowledge the fact that even if direct pollution of the Bay is controlled, the number and activity of persons in the Critical Area can still create adverse environmental impacts.

It should also be noted that Harford County's Critical Area Program was built upon the steps already taken by the County to protect its natural resources through such measures as its Natural Resources Overlay District, whose objectives are similar to those of the Chesapeake Bay Critical Area Act. The County's Critical Area Program has become the Master Plan element for the portion of the County it covers, and as such supports the visions of the Maryland Economic Growth, Resource Protection, and Planning Act of 1992.

Since the remaining acreage within the County's Critical Area is relatively small in proportion to the County as a whole, Harford County's Critical Area Program will also identify aspects of the Critical Area Program that are appropriate to adopt county-wide to protect the quality of the County's waters and natural resources. Particular attention will be focused on ways the County's sediment control and stormwater management programs can be more effective since runoff from development activities outside the Critical Area can have a major impact on the County's tidal waters and natural resources.

In addition, the area to be included in Harford County's Critical Area Program is dominated by the Aberdeen Proving Ground, which is not subject to local control. However, the Proving Ground has agreed to develop an Addendum to the County's Critical Area Management Program describing how their activities will be carried out in a manner that is consistent with the Criteria to the maximum extent possible. (See Appendix A.)

SUMMARY OF HARFORD COUNTY'S CRITICAL AREA PROGRAM

The focus of the County's Critical Area Program is the regulation of development activities to achieve the objectives of the Program. As described in detail in Chapter 2, the County's Critical Area is divided into three types of management areas: Intensely Developed Areas (IDA), Limited Development Areas (LDA), and Resource Conservation Areas (RCA) - in which different types and intensities of uses are allowed to occur.

The Criteria also specify management actions that are to be taken with respect to the following types of activities: water dependent facilities, shore erosion protection works, forestry activities, agricultural activities, sand & gravel mining and natural parks. The County's approach to the management of such activities within the Critical Area is discussed in Chapters 3 - 8, respectively.

In addition, the Criteria requires the protection of the following types of Habitat Protection Areas, no matter where they occur in the Critical Area:

- a 100-foot natural buffer adjacent to tidal waters, tidal wetlands, and tributary streams;
- areas containing rare and threatened species and species in need of conservation;
- colonial water bird nesting sites;
- riparian forested areas;
- large forested areas [(100 acres or greater)] utilized as breeding areas by forest interior dwelling birds and other wildlife species;
- historic waterfowl staging and concentration areas;
- plant and wildlife habitats determined to be of local significance because they contain certain species uncommon or of limited occurrence in the jurisdiction or because species are found in unusually high concentration; and
- anadromous fish propagation waters.

Harford County also protects nontidal wetlands in the Critical Area consistent with guidelines established in its zoning ordinance. Chapter 9 discusses the measures Harford County uses to ensure the protection of such areas.

A similar format was used for each of the chapters of this document; namely:

- I. A summary of the requirements of the Critical Area Criteria;
- II. An identification and analysis of significant issues and factors;
- III. A discussion of existing federal, State and local regulations and programs, utilized in their initially adopted or modified form in implementing the Critical Area Program; and
- IV. A discussion of modifications that were made to local regulations and programs to address Criteria requirements, including improvement of intergovernmental coordination.

A significant part of Harford County's Critical Area Program was the inventorying and mapping of the pertinent features of the County's Critical Area. Several series of overlay maps to the County's

tax maps (at a scale of 1"=600') were developed to depict this information:

- Land Use Management - delineating the location of the Critical Area boundary and the three types of Land Use Management Areas, IDA, LDA and RCA;
- Buffer Elements - depicting the 100-foot minimum Critical Area Buffer, Buffer Exempt Areas, and soils with developmental constraints and nontidal wetlands;
- Forest and Bird Resources - showing wooded areas, forest interior dwelling bird species and riparian habitat, colonial waterbird nesting sites, and migratory waterfowl concentration areas;
- Habitats of Local Significance - which include habitat protection areas of threatened and endangered species habitats; and
- Land Use/Land Cover in the Critical Area.

As discussed in detail in Appendix B, Harford County's Chesapeake Bay Critical Area Program has undergone a substantial amount of public review in order to ensure adequate opportunity for comment by pertinent State and local agencies, interested organizations, and the general public.

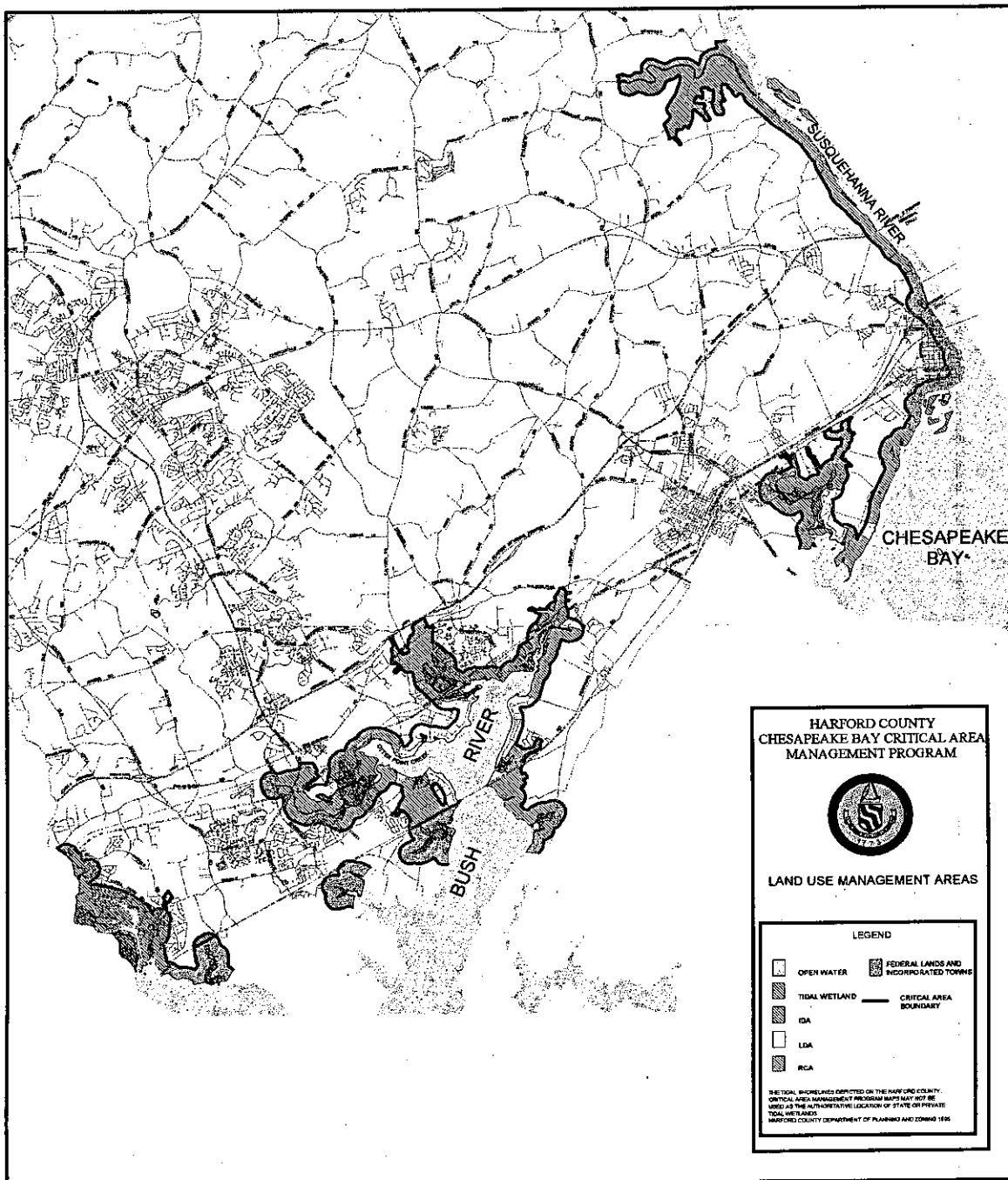
As part of the four-year Comprehensive Review described below, the Critical Area Maps were redone in digital format on the County's Geographic Information System (GIS). The remapping process will be described in more detail in Chapter 2. The Harford County Critical Area Management Program Zoning Map Overlay is presented in Figure 1.

PROGRAM IMPLEMENTATION

Due to the comprehensive nature of the Critical Area Program requirements, many units of government are involved in implementing the County's Critical Area Program. These include:

- Department of Planning and Zoning
- Department of Public Works
- Department of Parks and Recreation
- Department of Inspections, Licenses and Permits
- Soil Conservation District
- State Project Forester and local Forestry Board
- County Health Officer

All of these agencies play a role in reviewing projects developed in the County's Critical Area. The Department of Planning and Zoning is charged with the lead role of coordinating project review and insuring conformance with the requirements of the local program.



The County's Critical Area Program was fully implemented upon approval by the State Critical Areas Commission and subsequent County Council action. Approved June 1988, the Program includes adoption of the local Management Program and required changes to the Zoning Code and Subdivision Regulations. The County's Master Water and Sewer Plan was also revised in a manner consistent with the Local Critical Area Program. The revision process for this is more fully described in Appendix H.

As required by COMAR 8-1809(g), Harford County has reviewed and updated its Critical Area Management Program. Amendments were made to the Critical Area Ordinance, SECTION 267-41.1 of the Harford County Development Code to make it consistent with State Criteria and policies, and to address issues that have arisen during the first four years of the Program's operation. The natural resources inventory and information was also updated, and as mentioned above, the Critical Area Maps were converted to a digital format using the GIS.





CHAPTER 2

DEVELOPMENT IN THE CRITICAL AREA

I. REQUIREMENTS OF THE CRITICAL AREA CRITERIA

One of the principal objectives of a local jurisdiction's Chesapeake Bay Critical Area Program is required by the Criteria to be the minimization of both direct and secondary impacts of development activities on water quality and fish, wildlife, and plant habitats. Development activities are defined by the Criteria as "the construction or substantial alteration of residential, commercial, industrial, institutional or transportation facilities or structures." Local jurisdictions are to achieve this objective by dividing their Critical Area into three types of areas based upon land uses as of December 1, 1985 (namely, Intensely Developed Area, Limited Development Area, and Resource Conservation Area) within which different types and intensities of activities are to be allowed.

The Criteria also require that local jurisdictions establish special provisions regarding the location of water dependent facilities (those facilities that require a location at or near the shore; i.e., within the minimum 100-foot Critical Area Buffer that is otherwise to be maintained in a natural condition). Harford County's approach to water dependent facilities is discussed in the next chapter.

In addition, the Criteria requires that development activities ensure the protection of the following types of Habitat Protection Areas, regardless of where they occur in the Critical Area:

- a minimum 100-foot natural Critical Area Buffer adjacent to tidal waters, tidal wetlands, and tributary streams, which is expanded for adjacent sensitive soils;
- habitats of State designated Threatened and Endangered Species and Species in Need of Conservation;
- colonial water bird nesting sites;
- riparian forested areas, and large forested areas [(100 acres or greater)] utilized as breeding areas by forest interior dwelling birds and other wildlife species;
- historic waterfowl staging and concentration areas;
- plant and wildlife habitats determined to be of Local Significance because they contain species uncommon or of limited occurrence in the jurisdiction or because species are found in unusually high concentration; and
- anadromous fish propagation waters.

Harford County uses these areas and measures, which are described in detail in Chapter 9, to ensure the protection of Bay resources. Harford County also recognizes nontidal wetlands as a significant environmental feature. In addition to the State requirements for nontidal wetlands, Harford County protects nontidal wetlands outside of the Critical Area through its Natural Resource District, Section

267-41.D(5)(e) of the Zoning Code.

DEFINITION OF THE LAND USE MANAGEMENT AREAS

The Criteria define the three types of Land Use Management Areas within a local jurisdiction's Critical Area, to be divided as follows:

Intensely Developed Area (IDA) includes any area of 20 or more contiguous acres, or the entire upland portion of a municipality within the Critical Area (whichever is less) where residential, commercial, institutional and/or industrial development is predominant and relatively little natural habitat occurs. In addition, the area is to have at least one of the following characteristics:

- Housing density is equal to or greater than four dwelling units per acre;
- Industrial, institutional or commercial uses are concentrated in the area; or
- Public sewer and water collection and distribution systems are currently serving the area and housing density is greater than three dwelling units per acre.

Limited Development Area (LDA) includes any areas currently developed in low or moderate intensity uses that contain areas of natural plant and wildlife habitat and where the quality of runoff from such areas has not been substantially altered or degraded. In addition, the area is to have at least one of the following characteristics:

- Housing density between one unit per five acres and four dwelling units per acre;
- Area not dominated by agriculture, wetland, forest, barren land, surface water or open space;
- Areas having the characteristics of the IDA, but less than 20 acres in extent; or
- Areas having public water or sewer or both.

Resource Conservation Area (RCA) is any area dominated by wetlands, forests and forestry activities, abandoned fields, agriculture, fishery activities, or aquaculture. In addition, the area is to have at least one of the following characteristics:

- Housing density less than one dwelling unit per five acres; or
- The dominant land use is agriculture, wetland, forest, barren land, surface water or open space.

DEVELOPMENT RESTRICTIONS

Within each type of management area the Criteria specify certain requirements that local jurisdictions are to place on activities occurring in that area.

Within IDA, a local jurisdiction is to:

- Develop a strategy for reducing the impacts that existing development has on water quality through public education programs, urban Best Management Practices (BMPs), urban forestry programs, etc.;
- In the case of new development or redevelopment, pollution loadings are to be reduced by at least 10% from pre-development loadings through use of stormwater management BMPs or offsets (measures to improve water quality undertaken off site);
- To the extent practicable, require future development to use "cluster" development as a means of reducing impervious areas, and should maximize the amount of natural vegetation retained;
- If practical, establish permeable areas in vegetation;
- Maintain existing public access areas and encourage the establishment of new public access to the shoreline;
- Locate ports and industries using water transportation near existing port facilities or in areas identified as future port facilities sites in accordance with the provisions of the Criteria; and
- Maintain and, where possible, enhance biological resources, particularly forested areas, for their positive effects on water quality and plant and wildlife habitat.

Within LDA, a local jurisdiction is to:

- Maintain and, if possible, improve the quality of runoff and groundwater entering the Chesapeake Bay and its tributaries through the implementation of effective sediment control and stormwater management measures and the retention of natural areas;
- Limit intensity of development to ensure that the prevailing character of an area as identified by existing density and land use is maintained;
- Establish procedures to retain at least 80% of forest cover on sites proposed for development and maintain wildlife corridors to adjacent areas. The forest cover removed is to be replaced on an acre for acre basis elsewhere on the site or in the Critical Area;
- If a proposed development site is unforested, require the establishment of 15% of the site in forest cover;
- Prohibit development on slopes greater than 15% unless the proposed project is the only way to maintain the stability of the slope;
- Limit impervious surfaces to 15% of a site except as provided for in Section 267-41.1.F.(3).(b)

of the Harford County Zoning Ordinance;

- Consider modification to the Road Code standards (reduction in required road width, use of open-section roads, etc.) to minimize impacts of new development in the Critical Area;
- Discourage development on soils with development constraints (highly erodible soils, soils with severe septic constraints, etc.) and only allow development on such soils if mitigation measures are applied to adequately address the identified constraints and to avoid significant adverse impacts on water quality or fish, plant or wildlife habitat; and
- Promote the use of cluster development to minimize the extent of impervious surface and maximize the retention of natural vegetation.

Within RCA, local jurisdictions are to:

- Limit development to a density of one unit/20 acres. However, 5% of the amount of land designated RCA can be developed more intensely, through growth allocation. In addition, the owner of an undeveloped parcel is allowed to build one residential structure regardless of the density requirement provided that he complies with the other provisions of the Criteria;
- Promote the continuation of agriculture, forestry and natural habitats in RCA;
- Ensure that land use management practices are consistent with the Criteria pertaining to Habitat Protection Areas, agriculture and forestry;
- Prohibit new industrial, **INSTITUTIONAL**, and commercial uses in RCA; and
- Promote the use of agricultural and conservation easements to retain the existing character of RCA.

In addition, the Criteria prohibit the location of new solid or hazardous waste collection or disposal facilities or sanitary landfills or the expansion of existing solid or hazardous waste collection or disposal facilities or sanitary landfills in the Critical Area unless no alternative outside the Critical Area exists and the facility is needed to correct existing water quality or wastewater management problems.

II. SIGNIFICANT ISSUES AND FACTORS

The major issues and factors that Harford County addressed regarding development activities in the Critical Area are the following:

- The mapping of the three Land Use Management Areas, including the designation of areas as IDA, LDA, and RCA; and the identification of additional "expansion" areas that need to be included in Harford County's Critical Area in order to address the objectives of the Criteria;

- Improvement of the effectiveness of the County's existing sediment control and stormwater management programs by:
 - 1) The establishment of an approach for reducing pollutant loadings from development or redevelopment in IDA by at least 10% from pre-development conditions;
 - 2) The development of an urban stormwater retrofitting strategy for reducing the impacts on water quality from existing development; and
 - 3) The identification of modifications to sediment control and stormwater management practices and procedures needed to ensure the impacts of new development on water quality and fish, plant and wildlife habitat in the Critical Area are minimized.
- The identification of areas with steep slopes or areas containing soils with development constraints in which development must be restricted;
- The establishment of procedures for the conservation of forested areas, particularly for the afforestation/reforestation of areas to replace forested areas cleared for development in LDA and RCA;
- The establishment of procedures for allocating new growth in LDA and RCA at densities greater than the Criteria would otherwise allow (an amount equal to 5% of the County's total RCA acreage is allowed; 2.5% in LDA and 2.5% in RCA); and
- The establishment of procedures relating to grandfathered projects, non-conforming uses, and other projects requiring special procedures because of site-specific or project-specific characteristics.

The approach Harford County has taken to each of these issues is discussed below.

MAPPING HARFORD COUNTY'S CRITICAL AREA

DATA COLLECTION AND ANALYSIS FOR DESIGNATION OF LAND USE MANAGEMENT AREAS

Harford County used 1980 aerial photograph prints at a 1 inch = 600 foot scale as the basic source of information for the delineation of the three types of land use management areas. These prints were large enough in scale and of sufficient clarity to allow an accurate representation of land use in the County's coastal areas. To identify any changes in land use that might have occurred since 1980, a videotape of the Critical Area was made in early 1986, using a helicopter and a video camera. This information was then used to create overlays to the County's tax maps designating the pertinent areas. The overlay maps have been subsequently checked for consistency with 1986 aerial photos that were obtained subsequent to the initial mapping effort.

In order to accurately delineate tidal wetland boundaries and the Critical Area's 1000-foot boundary, the Department of Natural Resources wetlands maps showing the preliminary boundary determination at a scale of 1"=200' were photographically reduced to 1"=600' and the information transferred to the tax map overlay.

Harford County remapped its Critical Area in 1994-95 in a digital format using the County's Geographic Information System (GIS). Harford County obtained mylars of the State Wetland Maps from the Department of Natural Resources. These maps are aerial photographs at an approximate scale of 1"=200' and show the authoritative boundary of the extent of tidal influence. The extent of tidal waters and tidal wetlands was interpreted from the State Wetland Maps onto mylar base maps generated by the GIS of the County's Critical Area. These interpretations were verified by DNR, and were then digitized into the GIS. The digitized shoreline was then used to recalculate the 1000-foot Critical Area boundary using a program in the GIS. Expansion areas and boundaries between Land Use Management Areas were digitized from the original Program maps and were corrected according to descriptive text in the Critical Area Program documents. Maps of natural resources and Critical Area regulatory features were then created using existing data in the GIS and data digitized from the original Program maps. Figures 2 and 3 show the Land Use Management designations for Harford County's Critical Area.

APPROACH USED TO DELINEATE THE LAND USE MANAGEMENT AREAS

The basic definition of each of the three types of management areas stated in Section I-B above was used as the major determinant in designating specific geographic areas as one of the three types of land use management areas. (For example, the basic definition of IDA is areas where institutional, and/or industrial developed land uses predominate, and where relatively little natural habitat occurs.) The characteristics listed after the basic definition were used as supplemental factors in characterizing specific areas where appropriate.

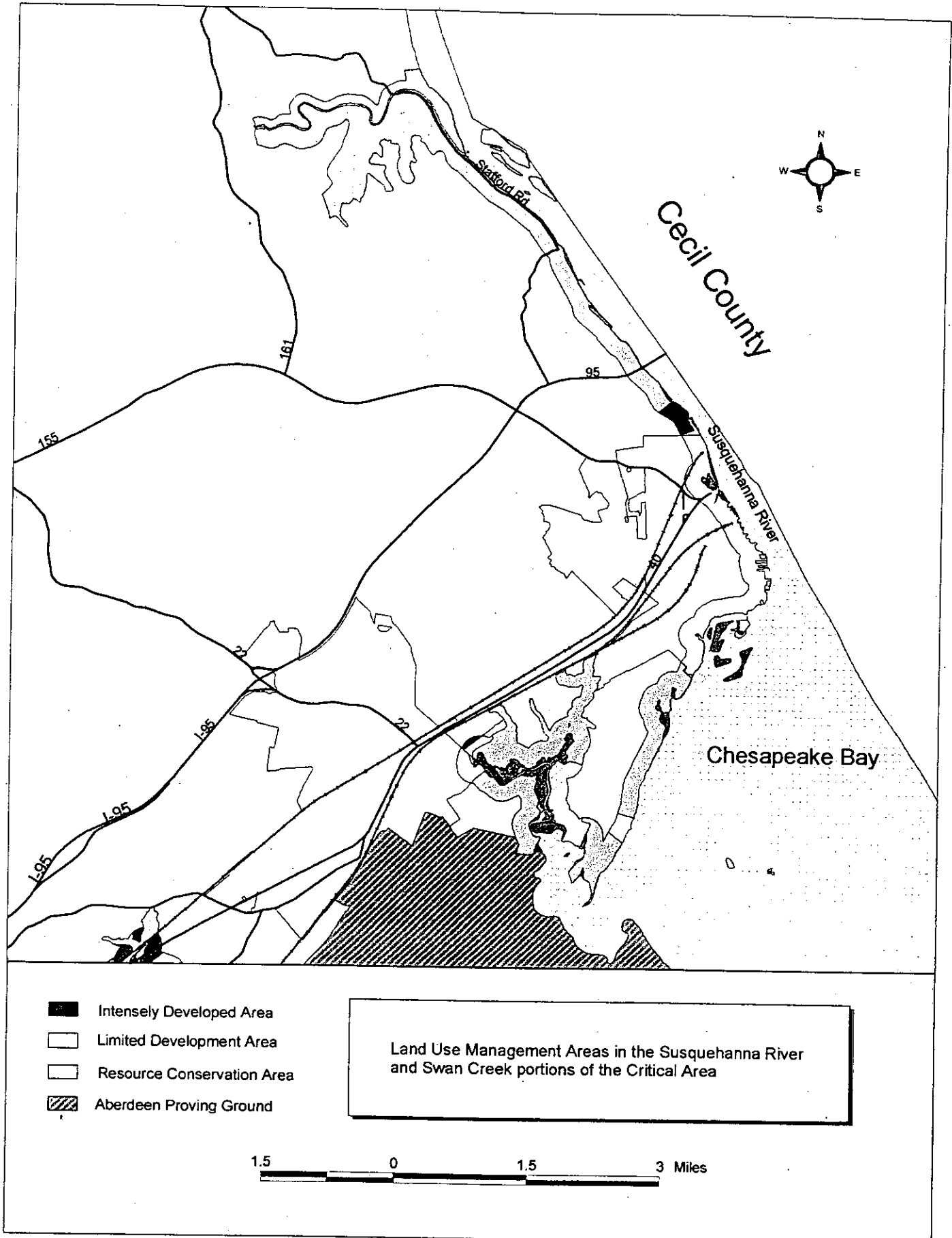
Analysis for designation purposes was undertaken on a community or subarea basis, using changes in land cover and the type and intensity of land use to determine boundaries between the different types of land use management areas. Property lines were used as a supplemental factor for determining such boundaries where appropriate. To be used as a factor in delineating an area LDA, water and sewer services had to have been actually in place on or immediately adjacent to a site as of December 1, 1985.

In the case of undeveloped areas located within existing developed areas, the following methodology was used:

- Areas under 20 acres were designated the same as the surrounding areas except that any areas of significant natural resource value, such as tidal wetlands, contained in such areas were mapped RCA;
- The designation of areas between 20 and 25 acres depended upon the significance of the natural features found on the site, the configuration of the site with respect to the shoreline and the pattern of development along the immediately adjacent shorelines; and
- Contiguous undeveloped areas 25 acres or greater were designated RCA.

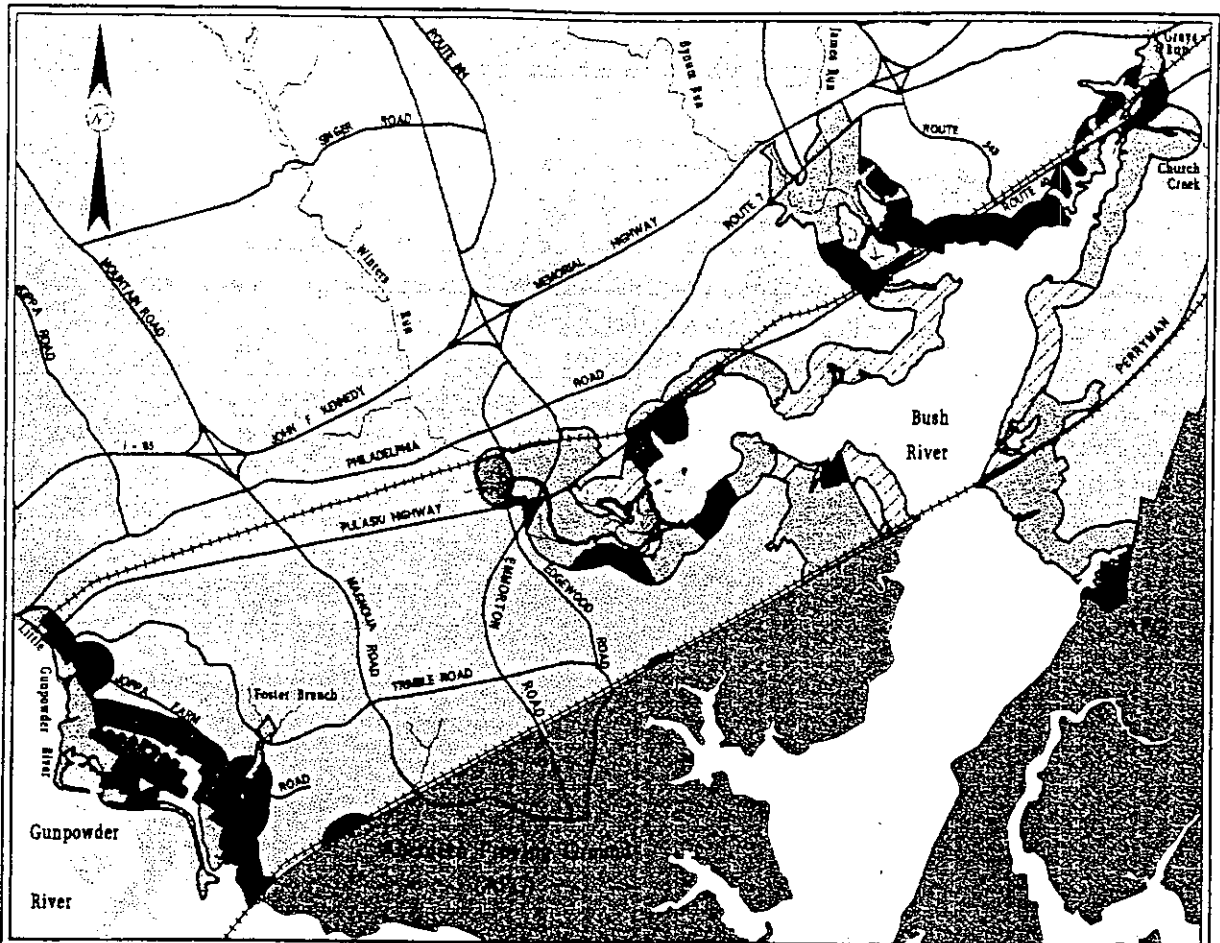
FIGURE 2

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FIGURE 3



Land Use Management Areas in the Gunpowder River
and Bush River portions of the Critical Area

- Intensely Developed Area
- ▨ Limited Development Area
- ▩ Resource Conservation Area

Approximate Scale 1 inch = 1.5 miles

EXPANSION OF HARFORD COUNTY'S CRITICAL AREA

As permitted by the Critical Area Law, as amended, Harford County has expanded the original 1000-foot boundaries of its Critical Area in several areas in order to more fully meet the objectives of the Chesapeake Bay Critical Area Act and Program. The reasons for such expansion are:

- To include certain contiguous nontidal wetlands;
- To ensure adequate protection for State designated Threatened and Endangered Species such as the Maryland Darter, and areas determined to be Habitats of Local Significance (as defined by the Criteria);
- To make the Critical Area boundary coincident with that of the 100-year floodplain in certain locations (within which development is already severely restricted by local regulations) or that of the County's Natural Resources District if it extended further landward;
- To include certain contiguous park land; and
- To provide protection to the headwaters of tributary streams that already are almost entirely located in the Critical Area.

ACREAGE OF THE LAND USE MANAGEMENT AREAS

With the expansion areas, the total area in Harford County's Critical Area was 8,205 acres at the time of Program approval (June, 1988) with 6,037 acres (73.58%) designated RCA; 1,242 acres (15.14%) designated IDA; and 926 acres (11.28%) designated LDA. Through the Growth Allocation process from 1988 to 1999, 96.6 acres of RCA were converted to IDA, and 66.8 acres of LDA were converted to IDA.

STORMWATER MANAGEMENT AND SEDIMENT CONTROL ISSUES

10% REDUCTION IN POLLUTANT LOADING IN IDA

Harford County's approach to meeting this requirement will be based on the 1993 method developed by the Metropolitan Washington Area Council of Governments for the Chesapeake Bay Critical Area Commission, which is described in detail in Appendix C as amended of this document. This method is based on the use of phosphorus as a keystone pollutant.

A simple formula is used to calculate pre-development and post-development loadings in an area that considers the rainfall occurring on the site, a runoff coefficient based upon the amount of imperviousness on the site prior to and after development, and a phosphorous runoff concentration factor whose value is based on whether the proposed development is new development or redevelopment. For undeveloped sites that are proposed for intensive development through the growth allocation process, a fixed benchmark loading is established. Removal rates have also been established for various stormwater management measures that could be used to accomplish the required pollutant loading reductions.

If total compliance is not achievable through on-site measures, then the use of off site measures will be required to make up the difference between the pollutant reduction required and the amount that can be reduced through on-site measures. The use of off-site measures, outside of the Critical Area, will be considered if the measures provide pollutant reduction within the same sub-watershed or watershed as the project. If compliance cannot be accomplished on-site or off-site as stated above, then a fee in-lieu will be considered. An in-lieu fee will be charged to developers based on the amount of the uncontrolled pollutant load discharged from the site and the estimated cost of constructing and maintaining an off site area.

URBAN STORMWATER RETROFITTING STRATEGY

In order to meet the Criteria requirements regarding development of a strategy for addressing the impacts on water quality that are generated by existing development, it is expected that the County will utilize the urban stormwater retrofit strategy being developed under the guidance of the Regional Planning Council with funding from the State Coastal Zone Management program. This strategy is discussed in detail in Appendix D. Briefly, it consists of defining priority watersheds in the County based upon the results of the State water quality assessment studies and local water quality protection objectives. Within such priority watersheds, areas of urban development are ranked based upon:

- the size of the urban area compared to the total urban area in the priority watershed;
- the size of the urban area to its drainage area;
- the size of the urban area's drainage area to the total watershed;
- a composite runoff coefficient for the urban areas based upon the amount of imperviousness in the urban area; and
- the erodibility of soils and the type of slopes in the urban areas drainage area and the proximity of the urban area to estuarine waters and other water bodies of importance.

For each of the urban areas ranked as important by the above strategy, an analysis of the potential applicability and cost-effectiveness of various retrofitting strategies is made. From a comparison of the potential remedial measures for those urban areas identified as having significant stormwater management problems, an urban stormwater retrofitting strategy can be developed which identifies priority areas for attention and the type of measures from which more detailed design analysis should be undertaken.

Funding to implement stormwater management retrofit needs thus identified can be obtained from offset in-lieu fees associated with development in IDA, and from State and Federal water quality grant programs and local capital project funding.

MODIFICATIONS TO SEDIMENT CONTROL AND STORMWATER MANAGEMENT PROGRAMS

As noted in the introduction to this document, identification and implementation of appropriate refinements to the County's Sediment Control and Stormwater Management Programs is one of the major emphases of Harford County's Critical Area Program. A contractual study was undertaken to produce a detailed analysis of the regulations and operating procedures associated with these programs. This study examined the following issues:

- ways in which water quality considerations can be incorporated into the application of sediment control and stormwater management measures, especially in areas where stormwater quantity control is waived due to proximity to tidal waters;
- ways in which stormwater management and sediment control concerns can be more fully incorporated into the development review process;
- ways in which stormwater management and sediment control procedures and measures can be more fully integrated;
- refinement of procedures for identifying areas in which infiltration, shallow marsh creation, and extended retention measures should be used as the most appropriate stormwater management measures;
- identification of procedures and regulations needing modification to address proposed refinements to State stormwater management and sediment control programs (revision of the *Standards and Specification for Soil Erosion and Sediment Control Measures*, etc.); and
- other areas in which refinements could be made to improve the effectiveness of the programs (interagency coordination, inspection/enforcement procedures, in-the-field modification procedures, permit review criteria, identification of particular measures to be used in environmentally sensitive areas, sediment control/stormwater management measures for single-lot construction, education/training programs, etc.).

A detailed description of the proposed changes in the County's Sediment Control and Stormwater Management Program proposed by this study are contained in Appendix E.

One proposed modification that should be highlighted involves changing the Subdivision Regulations to ensure that sufficient information is submitted at the time of concept and preliminary plan approval regarding proposed sediment control and stormwater management plans. This will allow adequate analysis of the potential impacts of proposed grading and cut & fill operations and the water quality aspects of stormwater management (to ensure that detailed consideration is given to the use of infiltration measures, or other measures providing water quality protection).

Changes have been made to the Department of Public Works requirements for sediment and erosion control and stormwater management between 1988 and 1994. These changes included a civil penalty program for sediment and erosion control violations and updated stormwater management regulations to address federal and State NPDES requirements. These changes effect development countywide and will function to improve water quality in the Chesapeake Bay and its tributaries.

IDENTIFICATION OF AREAS WITH SIGNIFICANT DEVELOPMENT CONSTRAINTS

The Criteria identified two major types of areas with significant development constraints. Development is prohibited on slopes greater than 15% unless the proposed project is the only effective way to maintain or improve the stability of the slope. Development is only allowed on soils having development constraints if the proposed project includes mitigation measures that adequately address the identified constraints and it is shown that such development will not have significant adverse impacts on water quality and plant, fish or wildlife habitat.

Harford County has reviewed information provided in the County's Soil Survey and associated supplementary information provided by the Soil Conservation Service to identify areas with slope and soil constraints. Table 2-1 lists the type of soils having one or more of the following types of development constraints: hydric soils, soils with hydric inclusions, highly erodible soils, soils with severe septic limitations, and steep slopes.

Hydric soils were identified by use of the National hydric soils list prepared by the U.S. Soil Conservation Service. However, it should be noted that soils not on this list, but which meet hydric criteria, may be found in the field. Areas with hydric soils that were 40,000 square feet or greater were classified as nontidal wetlands by Harford County, and thus, unsuitable for development. Hydric soils less than 40,000 square feet in extent are considered nontidal wetlands if they are found to be hydrologically connected to streams, tidal wetlands, or tidal waters, or were determined to be of special importance to fish, wildlife or plant habitat. Soils with hydric inclusions are considered soils with significant development constraints.

Highly Erodible Soils were identified as those soils with a slope greater than 15 percent, or those with a K factor of .35 or greater and a slope of 5% or greater. Soils with a K factor of .35 or greater and a slope of 5% or greater were listed as potentially highly erodible soils for which site specific analyses will have to be made.

Soils with severe septic limitations due to high water table, low permeability, etc., were noted so that areas could be identified in which sewer service would have to be provided before development would be allowed to occur.

Steep slopes were identified by analysis of the soil classifications in the Soil Survey. This was done based upon assurance from the Harford County District Conservationist that such soil classifications were an accurate representation of areas with steep slopes. Soils whose slope characteristics were noted as ranging between 8% and 20% were noted as potentially steep slope areas for which on-site analysis will be needed. When a proposed development is submitted, more detailed topographical information is usually required from which more precise identification of steep slope areas can be made.

Hydric soils, highly erodible soils, and steep slope areas have been mapped as an overlay to the County's

zoning maps so that areas with significant development constraints due to geomorphological characteristics can be readily identified. Due to their pervasiveness in the Critical Area, areas with severe septic limitations have not been mapped but can be easily identified by reference to the soil type maps in the Harford County Soil Survey.

FOREST CONSERVATION MEASURES

One of the major objectives of the Critical Area Program is to maintain and, where possible, improve the quality and quantity of the forest resources located in the Critical Area because of their value for water quality protection, wildlife habitat, recreation, etc. The Criteria specify different requirements for development in IDA and for development proposed in LDA and RCA.

DEVELOPMENT REQUIREMENTS IN IDA

With respect to development in IDA, the Criteria requirements are fairly general in nature. The destruction of forest and woodland vegetation is to be minimized and programs for the enhancement of forest and woodland resources are to be established. In addition, as noted in Chapter 9, those areas identified as Habitat Protection Areas are to be protected.

In order to meet these objectives, Harford County will require as part of its development review process that all proposed developments in the Critical Area be reviewed by a representative of the DNR to identify measures that can be undertaken to minimize adverse impacts on forest and woodland vegetation and their value for wildlife habitat, water quality protection and aesthetic enhancement of a site.

In addition, Harford County, with funding from the State of Maryland, is initiating an Urban Forestry Program to improve the quality and quantity of its forest and woodland areas in those areas that are already developed. A major objective of this program will be furthering the objectives of the Critical Area Program by working with community associations and pertinent local agencies to revegetate suitable areas in the Critical Area. Particular emphasis will be placed on establishment of vegetated buffers adjacent to tidal waters and tributaries and in the use of trees and other vegetative cover as urban stormwater retrofit measures. The proposed procedures for implementation of the Urban Forestry Program are discussed in Appendix F, as amended.

DEVELOPMENT REQUIREMENTS IN LDA AND RCA

In addition to the general requirements discussed above for development in IDA, the Criteria established specific requirements for the retention of forest cover, replacement of forest cover that is removed, and afforestation of presently unforested areas in both LDA and RCA.

TABLE 2-1
SOIL TYPES IN HARFORD COUNTY'S CRITICAL AREA WITH
DEVELOPMENT CONSTRAINTS

Soil Type	Hydric Soils	Highly Erodible Soils	Soils w/ Severe Septic Limitations	Slopes ≥ 15%
AdA - Aldino	1	X	X	
AdB - Aldino	1	PotentialX		
AdC - Aldino	1	X	X	
AsB - Aldino	1		X	
Av - Alluvial Land	X		X	
BaA - Baile	X		X	
BaB - Baile	X	X	X	
BeA - Beltsville	1		X	
BeB - Beltsville	1		X	
BeC - Beltsville	1	X	X	
BrC2 - Brandywine				
BcD3 - Brandywine			X	X
BrE3 - Brandywine			X	X
CcA - Chester				
CcB2 - Chester				
CcC2 - Chester		X		
CgB2 - Chester				
CgC2 - Chester				
CgD2 - Chester			X	X
ChB2 - Chillum				
CkC2 - Chillum				
CrE - Chrome			X	X
Cu - Codorus	1		X	
Cv - Comus			X	
Cx - Cut/Fill Land				Potential
DcA - Delanco	1		X	
DcB - Delanco	1	PotentialX		
EhB2 - Elioak				
EhC2 - Elioak		X		
En - Elkton	X		X	
EsA - Elsinboro				
EsB2 - Elsinboro				
EsC2 - Elsinboro		X		
EvC - Elsinboro				
Fs - Fallsington	X		X	
GcB2 - Glenelg				
GcC2 - Glenelg		X		
GcC3 - Glenelg		X		
GcD2 - Glenelg		X	X	X
GcD3 - Glenelg		X	X	X
GgB2 - Glenelg				
GgC2 - Glenelg				
GgC3 - Glenelg				

Table 2-1, Continued

Soil Type	Hydric Soils	Highly Erodible Soils	Soils w/ Severe Septic Limitations	Slopes ≥ 15%
GgD2 - Glenelg			X	X
GgD3 - Glenelg		X	X	X
GnA - Glenville	1		X	
GnB - Glenville	1		X	
Hb - Hatboro	X		X	
JpB - Joppa				
JpC - Joppa				
KeB - Kelly	1	PotentialX		
KeC2 - Kelly	1	X	X	
KfD - Kelly	1		X	Potential
KpA - Keyport	1		X	
KpB - Keyport	1		X	
KrA - Kinkora	X		X	
KrB - Kinkora	X	X	X	
LeB2 - Legore				
LeC2 - Legore				
LeD2 - Legore			X	X
LeE - Legore			X	X
LfC - Legore			X	
LfD - Legore			X	X
LfE - Legore			X	X
LgC3 - Legore				
LgD3 - Legore			X	X
Lr - Leonardtown	X		X	
LyB - Loamy/Clayey Land			X	
LyD - Loamy/Clayey Land		X	X	
LyE - Loamy/Clayey Land		X	X	X
MbB2 - Manor		Potential		
MbC2 - Manor		X		
MbC3 - Manor		X		
MbD2 - Manor		X	X	X
MbD3 - Manor		X	X	X
McB2 - Manor				
McC2 - Manor		X		
McC3 - Manor		X		
McD2 - Manor		X	X	X
McD3 - Manor		X	X	X
MdE - Manor		X	X	X
MfE - Manor		X	X	X
MgC - Manor				
MgD - Manor		X	X	X
MkA - Matapeake			X	
MkB - Matapeake				
MIA - Matapex	1		X	
MIB - Matapex	1		X	
MsA - Montalto			X	

Table 2-1, Continued

Soil Type	Hydric Soils	Highly Erodible Soils	Soils w/ Severe Septic Limitations	Slopes ≥ 15%
MsB2 - Montalto			X	
MsC2 - Montalto		X		
NeA - Neshaminy				
NeB2 - Neshaminy				
NeC2 - Neshaminy		X		
NsC - Neshaminy		X	X	
NsD - Neshaminy			X	X
NsE - Neshaminy			X	X
Ot - Othello	X		X	
Sa - Sand/Gravel	1			Potential
ShB2 - Sassafras				
ShC2 - Sassafras				
SIB2 - Sassafras				
SIC2 - Sassafras				
SsD - Sassafras				
SsE - Sassafras			X	X
St - Stony Land			X	X
Sw - Swamp	X		X	
Tm - Tidal Marsh	X		X	
WaA - Watchung	X		X	
WaB - Watchung	X	X	X	
WcB - Watchung	X	X	X	
WhB - Whiteford				
WhC2 - Whiteford		X		
WoB - Woodstown	1			

Notes:

- 1 - Soils of this type may contain small inclusions of soils noted as hydric soils in depressions, low areas, drainageways and seepage areas.

No more than 20% of forest cover on a site may be removed and the amount of forest cover removed must be replaced on a one-to-one basis either on-site or elsewhere in the Critical Area. Up to 30% of the forest cover on a site may be removed, if the amount of forest cover removed is replaced on a basis of 1.5 times the total amount removed. Removal of forest cover is to be undertaken in a manner that minimizes the impact on the value of the forest cover for wildlife habitat, water quality protection, aesthetic enhancement and recreation. In particular, wildlife corridors are to be maintained between existing forested areas on-site and forested areas adjacent to the site to provide continuity of existing plant and wildlife habitats found on a site with off-site habitats.

Forest areas cleared prior to approval by the local government or more than the amount allowed are required to be replanted on a basis of three times the amount of land cleared.

Areas that are presently unforested or those that have less than 15% of their area in forest cover are required to be afforested (planting of forest cover in areas presently unforested) at least 15% of the total area.

In undertaking afforestation efforts, priority shall be given first to establishing buffer areas along tidal waters and tributaries where they do not exist and second, to the afforestation of areas in a manner that would maximize their value for wildlife habitat and water quality protection. A mixture of trees, shrubs and ground cover should be planted as part of such afforestation efforts.

In replacing forest cover that was removed, priority shall be given to replacing the forest cover on-site in a manner that maximizes its value for wildlife habitat and water quality protection. If on-site replacement is unfeasible, the developer has the option of finding a suitable location elsewhere in the Critical Area or paying an in-lieu fee to Harford County to cover the costs of afforestation efforts elsewhere in the County's Critical Area. Such an in-lieu fee will cover the cost of the land purchases, trees, associated shrubs and ground cover as appropriate, ground preparation, labor and maintenance. The in-lieu fee will be \$0.40/sq. ft. of area cleared. Such in-lieu fee afforestation efforts will be undertaken as part of the County's Critical Area Forestry Program.

The long-term protection of the forest areas that are retained and areas that are afforested must be guaranteed through the use of final plat restrictions, conservation easements, homeowner agreements, or similar instruments, as a condition of approval of a proposed development.

The above requirements shall be implemented through use of a Forest Conservation Plan approved as part of the development review process by the DNR Harford County Department of Planning and Zoning with technical assistance provided by the Maryland Department of Natural Resources. The contents of such a Forest Conservation Plan, including the procedures to be followed in undertaking afforestation efforts, are described in Appendix F, as amended.

GROWTH ALLOCATION

AREA AVAILABLE FOR GROWTH ALLOCATION

As noted above, development in the RCA is limited to a density of 1 dwelling unit/20 acres. However, since this is a severe restriction on development, the Criteria included a provision for allowing some additional growth in undeveloped areas. An amount of land equal to 5% of the total amount of land designated RCA (less any areas that are designated as tidal wetlands) can be developed at a higher density than would otherwise be allowed by the Criteria - one half of which can be located in areas designated RCA and the other half in areas designated LDA. In Harford County, 6178 acres have been designated RCA, including 137 acres within the corporate limits of Havre de Grace. If the tidal wetland areas are subtracted (622 acres; including 27 acres within Havre de Grace) this allows a growth allocation of 278 acres - 139 acres of which is available for new development in RCA and 139 acres of which is available for more intense development than would otherwise be allowed in LDA.

It should also be noted that any alteration of the areas designated RCA by the construction of facilities that are approved by the State rather than the local government, (i.e., power plants) will not be counted against a County's growth allocation.

FACTORS GUIDING GROWTH ALLOCATION DECISIONS

The Criteria contain the following guidelines relating to growth allocation:

- New IDAs should be located in LDA or adjacent to existing IDA;
- New LDAs should be located adjacent to existing LDA or IDA;
- No more than one half of the allocated expansion may be located in RCA;
- New IDAs and LDAs should be located in order to minimize impacts to Habitat Protection Areas and in an area and in a manner that optimize benefits to water quality;
- New IDAs should be located where they minimize their impacts to the defined land uses of the RCA; and
- New IDAs and LDAs in the RCA should be located at least 300 feet beyond the landward edge of tidal wetlands or tidal waters. The 300-foot wide area between the tidal waters and the new development shall be established as Critical Area Buffer.

In evaluating applications for growth allocation in Harford County, the following policies and site specific factors will be considered in making any allocation awards:

GENERAL GROWTH ALLOCATION POLICIES

Due to the unique nature of the growth allocation process, and in order to maximize opportunities for a variety of projects with the greatest public benefits, growth allocation awards shall be made to projects that can initiate construction within 36 months of receiving the award. Construction shall be considered initiated when infrastructure plans and permits have been approved and onsite construction has commenced. Extensions of the time to initiate construction may be granted by resolution of the County Council. An extension shall not exceed 24 months.

Failure to initiate construction or obtain the necessary extensions will cause the growth allocation project approval to become null and void. The applicant must reapply for project approval through the Department of Planning and Zoning and the Chesapeake Bay Critical Area Program. Further, the Land Use Management boundaries shall remain in effect unless revoked by legislative action of the County Council. Such a revocation shall be initiated by the Department of Planning and Zoning, and enacted by the County Council as a legislative amendment to the Critical Area Program. This action will require a change in the Critical Area Maps and the assessment of available growth allocation.

In acknowledgement of the responsibility that the County has under the Critical Area Program to insure some continued opportunity for the expansion of the City of Havre de Grace within the Critical Area, a minimum of 20 acres of the total allocation available to the County for upgrade from RCA to other land use designations shall be reserved for the City. This allocation will be reevaluated every four years when the County undertakes a comprehensive review of its program. Official notification of the review will be provided to the City. Upon notification of the review, the City must request in writing that any remaining reserved acreage be maintained for their use. All other policies and site-specific factors outlined in this program shall also apply to the review of growth allocations within the City of Havre de Grace.

Due to the need to insure that any projects receiving a growth allocation shall be developed as originally represented by the applicants in the Critical Area Assessment Reports, all allocation awards shall comply with such conditions of approval as determined by the County for each project or suffer revocation of their growth allocation award.

All awards of growth allocation shall be consistent with the Critical Area Commissions 1995 Growth Allocation Policy Paper.

SPECIFIC FACTORS FOR GROWTH ALLOCATIONS

- The amount of forested area and other vegetative cover that is left undisturbed and thus retains its value for wildlife habitat and water quality protection.
- Additional public benefits that will be provided by the development, such as provision of public access facilities or acceleration of the provision of public water and sewer to areas with existing health problems (financial contribution to construction of sewerage treatment plant or associated facilities), consistency with "Smart Growth" initiatives etc.
- Use of "innovative" site design and construction design features to minimize the disturbance of natural areas and reduce the potential impacts on Habitat Protection Areas and adjacent RCA areas. These features could include, but are not limited to:
 - 1) the use of cluster development;
 - 2) the use of shallow-marsh creation stormwater management measures;
 - 3) the use of buffer areas to minimize impacts on existing habitats and wildlife corridors and protect adjacent natural and developed areas from impacts of the proposed development;
 - 4) the use of permeable paving surfaces to minimize the creation of impervious surface areas; and
 - 5) the use of appropriate landscaping plans and materials to enhance the establishment of vegetated areas on the project site.

Compliance with the guidelines for growth allocation listed in the Criteria will generally be required; **HOWEVER, ALTERNATIVES DETERMINED TO MEET THE GENERAL SPIRIT AND INTENT OF THE GUIDELINES MAY BE CONSIDERED.** Since the Criteria require that the amount of forest land located in areas designated RCA and LDA not be reduced (and if possible, increased), all projects given a growth allocation will have to replace, on-site or off-site within the Critical Area, all forest areas removed on a one-to-one basis. If such replacement is not feasible, an in-lieu fee of \$0.40 per square foot of area cleared will have to be paid to the County.

- Since adverse impacts on water quality from such projects are to be minimized, pollutant loading from projects granted growth allocation will have to be maintained at pre-development levels, and in the case of new IDAs reduced 10% from pre-development levels. To the maximum extent possible, pollutant reduction measures shall be constructed on-site within the Critical Area. Consideration of the establishment of treatment facilities outside of the Critical Area will be given if the proposed treatment facility provides water quality benefits to the same sub-watershed or watershed.
- In addition, development on slopes greater than 15% as measured before development will be

prohibited.

- Development will only be allowed on soils having development constraints if it includes mitigation measures that adequately address the identified constraints and if it will not have significant adverse impacts on water quality or plant, fish, or wildlife habitat.

GROWTH ALLOCATION APPROVAL PROCESS

In order for the County to adequately evaluate requests for Growth Allocations, an application for Growth Allocation must be filed with the Department of Planning and Zoning. In addition, the information required for concept plan or preliminary plan approval in the Critical Area (as appropriate) must be submitted and accompanied by a statement by the applicant on how the proposed development addresses the policies and factors noted above.

All project requests will be given an initial review for the completeness and adequacy of the application materials, and applicants will be notified within thirty (30) days of the sufficiency/insufficiency of their applications. Applicants will be encouraged to consult informally with the staff of the Department of Planning and Zoning regarding the adequacy of their proposal prior to its formal submittal.

Applications for growth allocation will be considered an amendment to the land use management area boundaries shown on the overlays to the County tax maps. Such growth allocation will be reviewed by the Department of Planning and Zoning and then forwarded to the Planning Advisory Board and the Environmental Advisory Board for their review and action. The Boards shall then transmit their recommendations to the County Council for a public hearing and final local action by the Council.

All growth allocation amendments approved by the Council shall be forwarded to the Critical Area Commission within thirty (30) days of the Council's final action. No amendment shall be considered final pending action by the State of Maryland Critical Area Commission.

Any area proposed for annexation by a municipality where the proposed use on the parcel requires a change in the land use management area (i.e., RCA to LDA, or IDA, etc.) shall be subject to the above approval process for growth allocation requests.

GRANDFATHERED PROJECTS AND OTHER PROJECTS REQUIRING SPECIAL EVALUATION PROCEDURES

The Criteria require that special conditions be applied to projects approved prior to formal adoption of a program, in the case of non-conforming uses and structures, and other projects deserving special consideration because of site-specific characteristics.

GRANDFATHERED PROJECTS

As discussed in more detail in Appendix G, an area developed in the Critical Area as a result of a project approval granted prior to formal adoption of the County's Critical Area Program, will have to be counted against the County's available growth allocation unless certain conditions are complied with.

To avoid any reduction in the County's total available growth allocation, Harford County took the following approach concerning grandfathered projects.

The following types of developments will be considered grandfathered, withstanding the density limitation that would otherwise be applied, provided that Habitat Protection Areas as identified in Chapter 9 of this document are protected and the requirements relating to water-dependent facilities and adequate stormwater management measures are complied with:

- Construction of a single family dwelling on an undeveloped, legal parcel of land that existed as of December 1, 1985;
- Construction of subdivisions that received final approval prior to June 1, 1984, provided that lots not individually owned are consolidated or reconfigured to comply with the provisions of Harford County's Critical Area Management Program to the maximum extent possible;
- Construction of subdivisions that received final approval between June 1, 1984 and December 1, 1985;
- Construction of subdivisions that received final approval after December 1, 1985, and prior to the date of approval of Harford County's Critical Area Management Program. Such subdivisions shall be consistent with the provisions of the County's Critical Area Management Program or the development of such areas must utilize a portion of the County's growth allocation; and
- The expansion by no more than 50% of commercial uses on parcels designated LDA because they did not meet the minimum 20-acre size required for IDA designation.

NONCONFORMING USES AND VARIANCE PROVISIONS

Provisions will be made for the continuation of non-conforming uses in the Critical Area provided that any intensification or expansion of such uses are only allowed through a variance granted in accordance with conditions that ensure that the objectives of the County's Critical Area Program are still being addressed, particularly those relating to protection of water quality and fish, plant, and wildlife habitat. In addition to non-conforming uses, such variance procedures could be utilized in cases where because of unusual site-specific conditions, literal application of the requirements of the Program would place an unreasonable hardship on a landowner.

BUFFER EXEMPT AREAS

The County has mapped certain sections of the shoreline that meet the conditions for a Buffer Exemption as described in COMAR 27.01.09.01.C.(8). In such areas, the existing pattern of residential, industrial, commercial or recreational development prevents the Buffer from fulfilling the

water quality and habitat protection objectives set forth in COMAR 27.01.09.01.B. In lieu of the Buffer requirements, the County administers the following program for Buffer Exempt Areas.

First, these areas are defined as those areas otherwise within the designated Buffer described above which are largely or totally developed or that include undeveloped lots of record, 200 feet or less in depth, the development of that is grandfathered under the provisions of COMAR 27.01.02.07 and the provisions of the County's Critical Area Program. Second, a set of rules is set forth for development and redevelopment in Section 267-41.1 Of The Harford County Zoning Code. Third, an offsetting program is established whereby the adverse effects of any new impervious surfaces created are mitigated.

III. EXISTING REGULATORY AND MANAGEMENT PROGRAMS

The County's development review process through which proposed developments are reviewed in accordance with the County's Subdivision Regulations and Zoning Code is the principal program that is pertinent to the regulation of development in the Critical Area. Federal and State regulatory programs may place restrictions on a proposed activity because of its impacts on water quality, flooding, or significant natural resources such as tidal and nontidal wetlands or rare and threatened species habitat but they generally do not otherwise place restrictions on the density or location of a proposed activity.

COUNTY DEVELOPMENT REVIEW PROCESS

With the implementation of the Critical Area Program, a manner by which specific issues concerning this Program can be addressed should be defined. This process will be incorporated with the existing subdivision review process.

The Department of Planning and Zoning is responsible for the approval of all subdivision of land. The subdivision process in Harford County is organized into a step-by-step approach. Concept plans are required for larger projects so that major issues associated with these projects can be resolved early, eliminating costly delays in the later stages of the review of a project. Any projects proposed for development within the Critical Area must have a Critical Area Report as part of the submission to the County. All subdivision plans, special exceptions, rezonings and variances must comply with the Critical Area Criteria. Concept plans are approved by the Department of Planning and Zoning after they have been circulated among relevant State and local agencies for their review and comment. Review agencies include the Department of Public Works, Health Department, Board of Education, Department of Parks and Recreation, State Highway Administration, Soil Conservation District, and other relevant Federal, State, or County agencies.

At the preliminary plan stage, sufficiently detailed information, including Critical Area Criteria, is to be provided concerning the project so that a decision can be made on the acceptability of the project subject to the review of engineering design information submitted as part of the final plan review. Preliminary plans are reviewed by a Development Advisory Committee (DAC) composed of local and State agencies in addition to the Department of Planning and Zoning. DAC meetings are held to address concerns identified by the reviewing agencies. These concerns may then need to be resolved prior to the project being approved. Any approved preliminary plan must be consistent with the concept plan submitted for the project.

Engineering designs of the location of proposed lots, building setbacks, roads, public utilities, etc.,

developed in accordance with the approved preliminary plan must be submitted at the final plan stage. The final plan is generally accompanied by a Public Works Agreement and/or Public Works Utility Agreement that specifies the developer's commitment to ensure that public utilities, roads, etc., will be provided in accordance with the final plan, along with a bond or other surety agreement to allow the County to take remedial action if they are not adequately constructed. Building permits are reviewed for zoning conformance by the Department of Planning and Zoning. Appeals of subdivision and building permit decisions by the Department of Planning and Zoning are to the County Administrator and the Circuit Court. The Department of Public Works, with technical assistance from the Soil Conservation District, is responsible for review of sediment control and stormwater management plans that are to be approved before the final plat is signed. The Department of Public Works is also responsible for development and revision of the County's Water and Sewer Plan.

Requests for rezonings are acted upon by a Hearing Officer, acting as an agent of the County Council. The Department of Planning and Zoning provides technical information and policy recommendations to the Hearing Examiner for consideration in making his decision. Prior to submittal to the Hearing Examiner, proposed rezonings are reviewed by the Planning Advisory Board that may make additional recommendations. The County Council hears appeals of the Hearing Officer's decisions and makes the final decision on Comprehensive Rezonings and revisions to Comprehensive Plans, and County ordinances based upon the recommendation of the Department of Planning and Zoning and other pertinent local agencies. The County Council's decision on these matters may be appealed to the Circuit Court.

IV. MODIFICATIONS MADE TO LOCAL REGULATIONS AND PROGRAMS

MODIFICATION OF THE NATURAL RESOURCES DISTRICT

The Natural Resources District Ordinance was modified to delete references to areas within 1000 feet of tidal waters or tidal wetlands so that the Chesapeake Bay Critical Area Overlay District Ordinance is fully consistent with the detailed requirements of the Critical Area Program. Provisions of this ordinance restricts the types and intensities of activities in the three land use management areas (IDA, LDA, and RCA), in accordance with pertinent provisions of the Criteria. Such provisions and the County's approach to addressing them are summarized in Section I above with respect to development activities and in similar sections of the chapters that follow which summarize the requirements of the Criteria and the County's approach for addressing them with respect to water-dependent facilities, shore erosion protection measures, forestry operations, agricultural activities, surface mining, natural parks and Habitat Protection Areas. Appendix H contains a copy of the Chesapeake Bay Critical Area Overlay District that, as noted above, is the principal mechanism for implementing Harford County's Chesapeake Bay Critical Area Management Program.

REVISION TO THE SUBDIVISION REGULATIONS

In terms of meeting the Critical Area Program Development Criteria, the County's Subdivision Regulations can play an important role, particularly in terms of the information that they specify as required for a concept plan or preliminary plan application, what factors are to be considered in

approving such plans, and what information must be provided on final plats and supporting documents. Changes have been made to the Subdivision regulations to address the Critical Area requirements.

APPLICATION INFORMATION REQUIREMENTS FOR SUBDIVISIONS

With regard to information requirements for concept plans and preliminary plans, the most important requirement is that adequate information be supplied on the nature, location and density of the proposed development. To cover projects both inside and outside of the Critical Area, this would include conceptual plans for sediment/ erosion control and stormwater management and information on the geomorphological and natural features found on or immediately adjacent to the site, including the following:

- topography on and adjacent to the site;
- soils present on site including identification of the location of soils with development constraints (highly erodible soils, soils with severe septic limitations, etc.);
- steep slopes between 15% and 25%, and slopes greater than 25%;
- 100-year floodplain as identified in FEMA flood insurance study or in more detailed studies undertaken or approved by the County;
- perennial and intermittent streams and tidal waters located on or adjacent to site;
- tidal wetlands;
- nontidal wetlands located on or adjacent to the site (identified by existence of predominantly hydric soils or obligate, facultative wet hydrophytic vegetation);
- extent of mapped Natural Resources District including any required buffer areas;
- extent of Critical Area including required buffer areas;
- extent of limit of disturbance and Critical Area Buffer line;
- vegetative cover (particularly location of forested areas on and adjacent to site); and
- areas that are located on or adjacent to the site that have been identified as containing plant and wildlife habitat of State or County importance. (Maps showing the geographical location of these areas are available for review at the Harford County Department of Planning and Zoning.) Such areas would include the following:
 - 1) Habitats of State Designated Threatened or Endangered Species, of Local Significance and Species in Need of Conservation;

- 2) State Natural Heritage Areas;
- 3) Anadromous fish spawning and nursery areas;
- 4) Submerged aquatic vegetation beds;
- 5) Other areas identified by State and Federal agencies as important plant or wildlife habitat areas; and
- 6) Habitats determined to be of special significance that contain species uncommon or of limited occurrence in the jurisdiction or because the species is found in unusually high concentration or because they contain an unusual diversity of species.

PLAN APPROVAL REQUIREMENTS FOR SUBDIVISIONS

Factors that will be considered in determining whether proposed concept plans and preliminary plans should be approved include:

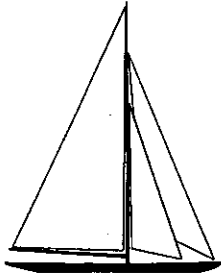
- location of site and distribution of land use on or adjacent to site;
- potential impacts on water quality;
- potential impacts on significant natural features (tidal and nontidal wetlands, forested areas, plant and wildlife habitat identified as of State or local importance, etc.);
- limitations on development due to soil or slope constraints;
- existing and proposed roads and transportation networks;
- proposed open space;
- location and adequacy of proposed utilities; and
- proposed sediment/erosion control and stormwater management plans.

With respect to the approval of final plats, detailed information is required on lot lines, building setbacks, roads, utilities, natural features to be left undisturbed - including any buffer areas needed to address requirements of the Natural Resources District (outside of the Critical Area) or the Critical Area Overlay District. It also will be required that the final plat be accompanied by a Public Works Agreement, certifying that sediment control and stormwater management plans have been approved; and measures such as conservation easements, homeowner agreements or similar instruments instituted to ensure that buffer areas, nontidal wetlands and other significant natural features are protected in perpetuity.

MODIFICATION OF OTHER LOCAL REGULATIONS AND MANAGEMENT PROGRAMS

The Critical Area Program serves as the County's Master Plan for the areas it covers. The County's Water and Sewer Plan has been reviewed for consistency with this Program. It should also be noted that no amendment to the County's Solid Waste Management Plan is necessary because there are no existing or proposed solid or hazardous waste disposal facilities or sanitary landfills in Harford County's Critical Area. However, as noted above, revisions have been made in the County's sediment control and stormwater management regulations and operating procedures to ensure that water quality concerns and protection of significant natural features are adequately addressed in the implementation of these programs. This will be accomplished in part based upon the recommendations of the study undertaken to identify ways to improve the effectiveness of the County's Stormwater and Sediment Control Programs (see Appendix E).





CHAPTER 3

WATER-DEPENDENT FACILITIES

I. REQUIREMENTS OF THE CRITICAL AREA CRITERIA

The Criteria defines water-dependent facilities as "those structures or works associated with industrial, maritime, recreational, educational, or fisheries activities that require location at or near the shoreline within the Buffer." Examples of such facilities are ports, the intake and outfall structures of power plants, water-use industries, marinas and other boat docking structures, public beaches and other public water-oriented recreation areas, and fisheries activities.

According to the Criteria, water dependent facilities can be located in the Buffer area of those lands designated as IDA or LDA if it can be shown:

- The facility(ies) are water-dependent;
- The project meets a recognized private right or public need;
- Adverse effects on water quality, and fish, plant, and wildlife habitat are minimized;
- Insofar as possible, nonwater-dependent structures or operations associated with water-dependent projects or activities are located outside the Buffer.

Facilities associated with public beaches and other public water-oriented recreation/education areas, with scientific research efforts, and with fisheries activities can be located in the Buffer of lands designated as RCA provided these meet certain conditions.

To ensure that the potential adverse impacts of water-dependent facilities are minimized, the Criteria require that local jurisdictions develop a planning process to ensure that the following factors are considered in determining areas suitable for new or expanded water-dependent facilities:

- The activities will not significantly alter existing water circulation patterns or salinity regimes;
- The water body upon which the activities are proposed has adequate flushing characteristics in the area;
- Disturbance to wetlands, submerged aquatic vegetation, or other areas identified as important aquatic habitat will be minimized;

- Adverse impacts to water quality that may occur as a result of the activities, such as nonpoint source run-off, sewage discharge from land activities or vessels, or pollutant run-off from boat cleaning and maintenance operations, are minimized;
- Shellfish beds will not be disturbed or be made subject to discharge that will render them unsuitable for harvesting;
- Dredging shall be conducted in a manner, and using a method, which causes the least disturbance to water quality and aquatic and terrestrial habitats in the area immediately surrounding the dredging operation or within the Critical Area, generally;
- Dredged spoil will not be placed within the Buffer or elsewhere in that portion of the Critical Area that has been designated as a Habitat Protection Area except in previously approved channel maintenance disposal areas or as used for shore erosion protection measures;
- Interference with the natural transport of sand will be minimized.

The Criteria also establish specific conditions relating to the following types of water-dependent facilities: ports, water-dependent industrial facilities, marinas and other commercial maritime facilities, community piers and other related noncommercial boat docking and storage facilities, public beaches and other public water-oriented recreation or education areas, scientific research facilities and commercial fishing facilities.

New, commercial marinas and related maritime facilities are not allowed in RCA. However, existing commercial marinas located within the RCA may be allowed to expand if it can be shown that the expansion will result in an overall improvement in water quality at the marina site or a reduction in the pollutant loading from the marina. New marinas, which can be located in LDA or IDA, must establish a means of minimizing the discharge of bottom wash waters into tidal waters as a condition for their approval. New and existing marinas must meet the sanitary requirements for such facilities established by the State Department of the Environment (MDE).

New or expanded community marinas and other noncommercial boating, docking and storage facilities may be located in the Buffer throughout the Critical Area if they meet the following conditions:

- The facilities do not offer food, fuel, or other goods and services for sale and do provide adequate and clean sanitary facilities;
- The facilities are community-owned and established and operated for the benefit of the residents of a platted and recorded riparian subdivision;
- The facilities are associated with a residential development approved by the local jurisdiction for the Critical Area and consistent with all the standards and regulations for the Critical Area;
- Disturbance to the Buffer is the minimum necessary to provide a single point of access to the

proposed facilities;

- If community piers or slips are provided as part of a development built or constructed after June 24, 1988 private piers in the development are not allowed. Private piers are not otherwise regulated by the Criteria; and
- The number of slips or piers, permitted at the facility shall be the lesser of a or b below:
 - a. One slip for each 50 feet of shoreline in the subdivision in the IDA and LDA, and one slip for each 300 feet of shoreline in the subdivision in the RCA; or
 - b. A density of slips or piers, to platted lots or dwellings within the subdivision in the Critical Area according to the following schedule:

**Platted Lots or Dwellings
in the Critical Area**

up to 15
16 - 40
41 - 100
101 - 300
over 300

Slips and Moorings

1 for each lot
15 or 75%, whichever is greater
30 or 50%, whichever is greater
50 or 25%, whichever is greater
75 or 15%, whichever is greater.

Public beaches or other public water-oriented recreation or education areas including, but not limited to, publicly owned boat launching and docking facilities and fishing piers are allowed in the Buffer throughout the Critical Area. In LDA and RCA, they must meet the following conditions:

- Adequate sanitary facilities are provided;
- Service facilities are, to the extent possible, located outside the Buffer;
- Permeable surfaces are used to the extent practicable, if no degradation of groundwater would result; and
- Disturbance to natural vegetation is minimized.

Areas for passive recreation such as nature study, and hunting and trapping, and for education are allowed in the Buffer if service facilities for these uses are located outside of the Buffer. Water-dependent scientific research facilities operated by governmental agencies or educational institutions can be located in the Buffer if associated nonwater-dependent structures or facilities are, to the extent possible, located outside of the Buffer. Commercial water-dependent fisheries facilities such as structures for crab-shedding, fish off-loading, docks, and shore-based facilities necessary for fisheries activities are allowed in the Buffer throughout the Critical Area.

II. SIGNIFICANT ISSUES AND FACTORS

The major issues associated with water-dependent facilities are development of a planning process for identification of areas suitable for sites of water-dependent facilities, and development of an implementation program for ensuring that new or expanded facilities are developed in a manner that minimizes adverse impacts on the Buffer, on water quality and on fish, plant and wildlife habitat.

DEVELOPMENT OF PLANNING PROCESS FOR THE LOCATION OF WATER-DEPENDENT FACILITIES

There are no existing or proposed commercial or industrial facilities that would require facilities and water transport facilities other than the Arundel Corporation quarry operation along the Susquehanna River, which has docking facilities to allow water transport of the rock, sand and gravel materials mined there. The only other commercial/industrial facility that will require intrusion into the Buffer is the proposed Baltimore Gas and Electric Company electric generating plant on the Perryman peninsula, which will require a utility corridor for secondary intake/output water pipes.

Table 3-1 lists the existing marinas, boat launching ramps and associated facilities in Harford County's Critical Area. Figures 4 and 5 show the locations of these facilities in the Critical Area. The potential for additional marinas in the County is not great because of the shallow water depths and extensive marsh areas and the limitation on boat transit to the Chesapeake Bay posed for larger craft by the Amtrak bridges across the Gunpowder and Bush rivers. Boat traffic to the Chesapeake Bay is also occasionally stopped by firing operations at Aberdeen Proving Grounds. Nevertheless, Harford County considers the following factors in evaluating proposals made for new or expanded marinas (or other water-dependent facilities) in the Critical Area:

- Of particular importance are impacts on submerged aquatic vegetation beds, marsh areas, spawning or nursery areas of anadromous fish, the habitat of rare or threatened species and species of local significance or habitat of local significance. Projects likely to have significant impacts on such areas are deemed unacceptable. Any less severe impacts require mitigation. In addition, mitigation must be provided for any significant impacts on shallow water habitats (areas with depths of less than four feet) from dredge or fill operations;
- The amount of dredging and dredged material disposal is also analyzed. In general, projects not involving significant dredging are preferred. Areas with high shoaling and sedimentation rates or long access channels should be avoided as sites for water-dependent facilities because of the significant amount of dredging required. Of particular importance in other cases are the impacts of the proposed dredging on aquatic habitat, circulation pattern and salinity regimes and the availability of appropriate dredge material disposal sites. Areas designated as Habitat Protection Areas and the "100-foot" Buffer are not acceptable areas, except where there is an existing channel maintenance dredged material disposal area, or where the dredged material is used for shore erosion protection. Utilization of the Best Management Practices for reducing impacts associated with dredging operations described in Appendix I is required;

FIGURE 4

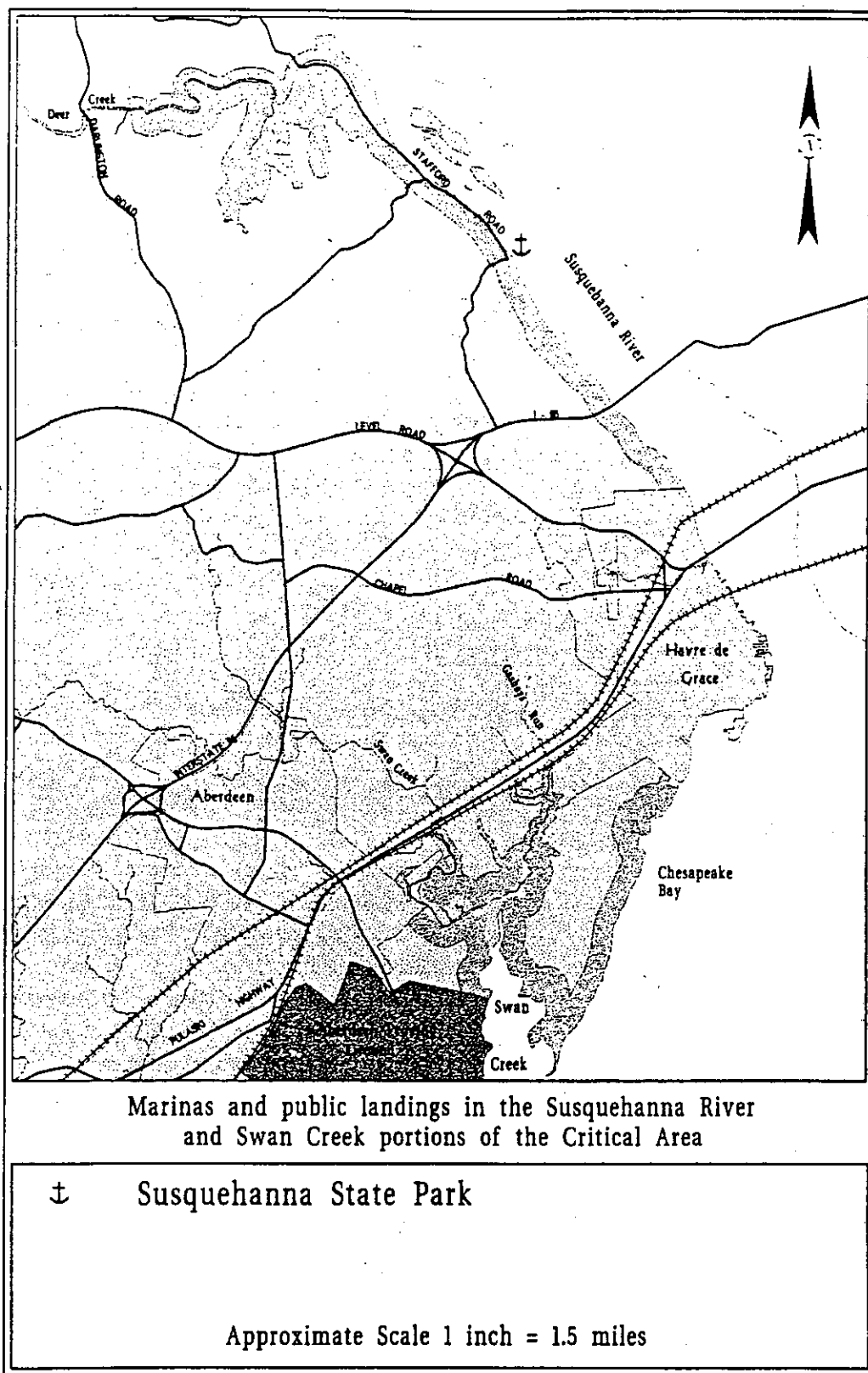
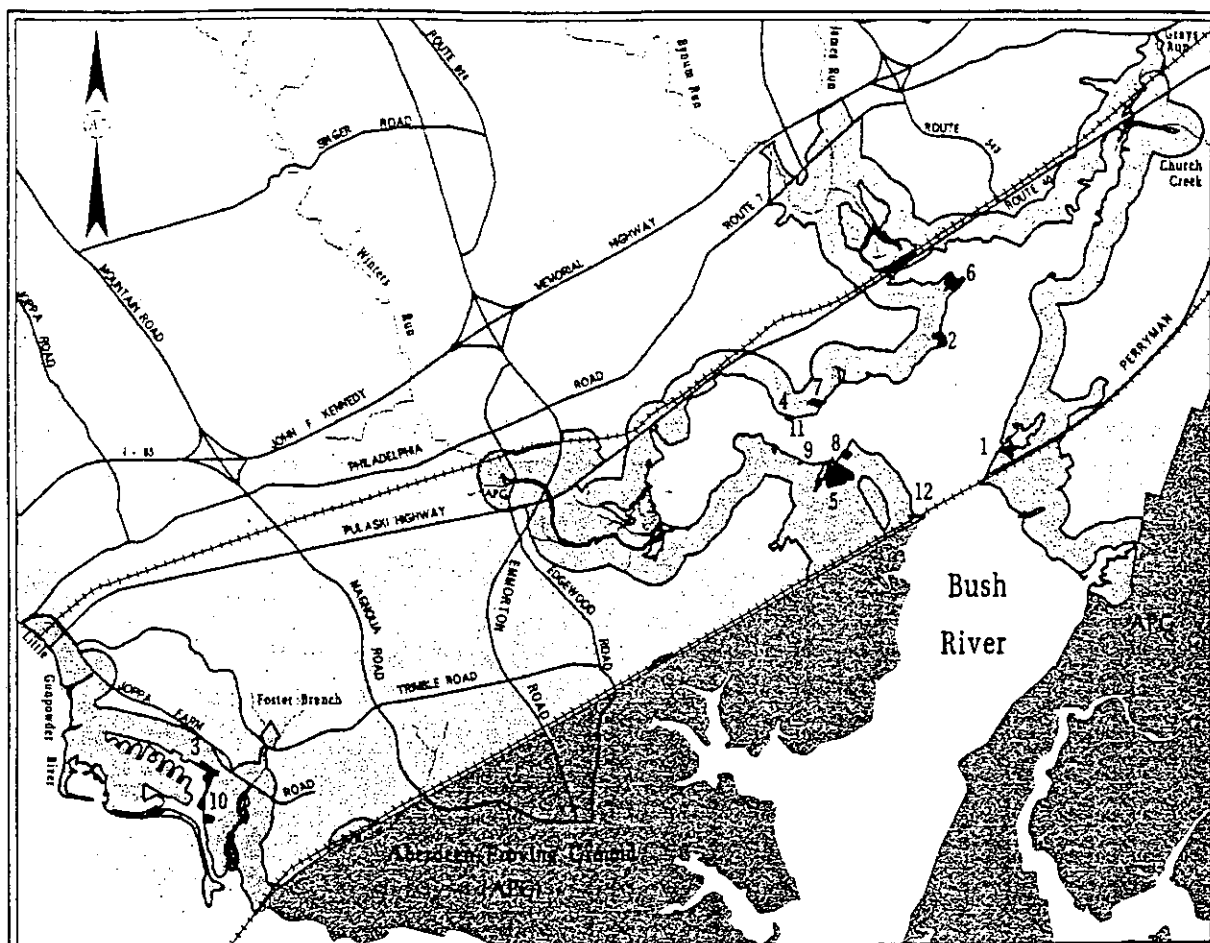


FIGURE 5



Marinas and public landings in the Gunpowder River
and Bush River portions of the Critical Area

Major Boating Facilities

- | | |
|--------------------------|-----------------------------|
| 1 Bush River Boatworks | 7 Elks Club |
| 2 Bush River Yacht Club | 8 Flying Point Park |
| 3 Gunpowder Cove Marina | 9 Freys Landing |
| 4 Otter Point Boat Club | 10 Mariner Point Park |
| 5 Flying Point Marina | 11 Otter Point Landing |
| 6 Long Bar Harbor Marina | 12 Willoughby Beach Landing |

Approximate Scale 1 inch = 1.5 miles

- Interference with navigation caused by proximity of a boating facility near State or federally maintained channels constitutes grounds for denial of a proposed project;
- Potential impacts on water quality are also important factors. Location of new facilities in areas with flushing rates of five days or greater, as determined by using the EPA flushing model documented in the publication, *Coastal Marinas Assessment Handbook*, are considered unacceptable. Projects in proposed areas with poor to fair water quality conditions as determined by State Water Quality Standards are required to show that stormwater management measures and associated Best Management Practices instituted as part of the project will result in a net improvement in water quality conditions. Projects proposed in good water quality conditions are required to show that they will not result in a deterioration of water quality conditions; and
- Land based aspects of proposed water-dependent facilities must also be considered. New nonwater-dependent facilities must be located outside the Buffer, adequate road access to the site must be available and appropriate stormwater management measures and sewage disposal facilities must be provided. New marinas and commercial or industrial operations will be prohibited from locating in areas designated as RCA. As a condition for approval of the expansion of existing marinas in RCA appropriate measures to improve the water quality conditions at the site and the quality of the runoff from the site are required. Such improvement may include the installation of pump-out facilities.

DEVELOPMENT OF AN APPROPRIATE IMPLEMENTATION PROGRAM

In order to ensure that the potential adverse impacts of new or expanded water-dependent facilities are adequately addressed, provisions enacting the considerations discussed in section above have been included in the Chesapeake Bay Critical Area Overlay District Ordinance. The type of information required of an applicant so that the Department of Planning and Zoning can adequately review proposed projects is discussed in detail in Appendix I. Such information includes the relationship of the proposed site to submerged aquatic beds, wetlands, and other significant fish, plant and wildlife habitats, existing substrate conditions, existing water depths, water quality conditions, and the characteristics for the on-shore portion of the facility.

It is also important to ensure that appropriate Best Management Practices are utilized for activities at the marinas in order to minimize adverse impacts on water quality and aquatic resources. Such Best Management Practices include use of porous surfaces and retention of vegetation wherever possible; provision of adequate toilet facilities and trash receptacles; in the case of boat washing facilities, the use of measures to prevent discharge of anti-foulants, oil/grease, and detergents to tidal waters, etc. In addition, provision has been made for review by the Department of Planning and Zoning of proposed community piers and public access facilities to ensure that the conditions of the Criteria described in Section I above are met.

TABLE 3-1

**EXISTING MARINAS AND OTHER RECREATIONAL
BOATING FACILITIES IN HARFORD COUNTY'S CRITICAL AREA**

Marinas		Piers and Ramps	
Bush River Boatworks 2148 Perryman Road Perryman, MD 21130	60 slips, 3.5 acres, 75 parking spaces, 1 launching ramp	Elks Club Riverview Drive Abingdon, MD 21009	pier
Bush River Yacht Club Long Bar Harbor Road Abingdon, MD 21009	76 slips, 3 acres, parking spaces	Flying Point Park Kennard Avenue Edgewood, MD	fishing pier, 2 boat launch
Gunpowder Cove Marina 510 Riviera Drive Joppa, MD 21085	290 slips, 11 acres, 1 launching ramp, 180 storage spaces 500 parking spaces	Freys Landing Freys Road	undevel launch
Otter Point Boat Club 600 Otter Point Avenue Abingdon, MD 21009	58 slips, 0.3 acres, 32 parking spaces, (PRIVATE)	Mariner Point Park Kearney Drive Joppatowne, MD	39 acres, devel parkland, 4 launches
Flying Point Marina 324 Flying Point Road Edgewood, MD 21078	119 slips, 10 acres, 125 parking spaces, 1 launching ramp	Otter Point Landing Otter Point Road	fishing pier, launching ramp, 1 acre
Long Bar Harbor Marina 4228 Birch Avenue Abingdon, MD 21009	32 slips, 7.5 acres parking spaces	Willoughby Beach Public Landing Willoughby Beach Rd	pier, 1.3 acres, launching ramp
		Susquehanna State Park	launching ramp

Sources: Harford County Chamber of Commerce
Harford County Parks and Recreation Department
Harford County Department of Planning and Zoning 1993 Marina Survey.

III. EXISTING REGULATORY AND MANAGEMENT PROGRAMS

FEDERAL REGULATORY PROGRAMS

In accordance with Section 10 of the Rivers and Harbor Act of 1899 and Section 404 of the Clean Water Act of 1977, the U.S. Army Corps of Engineers, in conjunction with other federal agencies, regulates any construction, excavation or deposition of materials in navigable waters and the discharge of dredged or fill material in all other waters of the United States, including adjacent wetlands. Thus, marinas, piers, mooring buoys, boat launching ramps and any other facilities placed in wetlands, tidal waters or streams must receive a permit from the Corps of Engineers. The roles of various federal agencies in this regulatory process are shown in Table 3-2. In making decisions regarding proposed projects, the Corps also considers any comments submitted by State and local agencies, interested organizations or the public. The main factors the Corps considers in making decisions on proposed projects are:

- Keeping waterways open to navigation;
- Prohibiting obstruction of channels or access to navigable waters;
- Potential impact of the project on fish and wildlife resources;
- Potential impact of the project on water quality;
- Protection of historical, scenic and recreational areas;
- Impacts of dredging activities; and
- Selection of appropriate dredged material disposal areas.

As noted below, the Corps must receive water quality certifications and Coastal Zone Management consistency determinations from the State before approving proposed projects.

STATE REGULATORY PROGRAMS

All activities proposed to be undertaken in tidal waters or tidal wetlands must receive a State wetlands permit or license from the State of Maryland. Activities occurring below the mean high tide require a wetlands license from the Board of Public Works. Those proposed in areas containing marsh vegetation that are periodically flooded (at least once a year) require a permit from the Department of Natural Resources. In both cases, application is made to the Wetlands Permits Division of the Department of Natural Resources since it advises the Board of Public Works on wetlands applications. The Wetlands Permits Division coordinates its review of proposed projects with that of the Corps of Engineers and considers comments made by other State agencies, local governments and other interested parties in making its decisions. The roles played by the various State agencies in reviewing proposed projects, including marinas and other related facilities, are summarized in Table 3-3. The factors considered by the Wetlands Division in making its decision on proposed projects include the following:

- The location of a boating facility should be such that it or the boating activity it engenders does not create or aggravate:
 - a. adverse impacts on wetlands, aquatic resources, and navigation,
 - b. congestion and safety problems,
 - c. turbidity or other adverse water quality impacts,
 - d. shore erosion problems, and/or
 - e. other adverse environmental impacts;
- Encouragement of centralized, common boating facilities for subdivision developments or communities;
- Limitations on artificial channeling and avoidance of dead-end or deep canals;
- Encouragement of extending docking facilities to deep water as an alternative to dredging, when feasible;
- Ecologically sound design of bulkheads and shore erosion protection measures (e.g., placement behind, rather than in front of, a marsh fringe, use of vegetative measures/rip rap whenever possible), and normally not permitting such work where it would adversely affect navigation, surface drainage, significant flora or fauna, and the like;
- Use of only such filling as is necessary for a shore protection work and prohibition on filling to create fast land;
- Limitations are normally required on dredging in general and/or dredging for fill (e.g., no dredging within 15 feet of identified marsh areas and 200 feet of oyster beds, or in spawning and nursery areas between April 15 and July 15);
- Denial of nonwater-dependent uses of wetlands (i.e., residential structures, parking lots, restaurants or factories);
- Prohibitions against navigational or water exchange obstruction; and
- Encouragement of the siting of boat facilities in areas with optimum conditions (e.g., location in lower tributary is preferred over headwater areas to encourage flushing and proximity to deep water, location so as not to interfere with existing fishing, water recreation, bridges, and the like, location to avoid necessity of crossing vegetated wetlands, limitation of structural encroachment into channels).

TABLE 3-2

**FEDERAL AGENCIES INVOLVED IN REVIEW OF
MARINAS AND OTHER WATER-DEPENDENT FACILITIES**

Agency		Authority	Function
U.S. Army Corps of Engineers	a.	Section 404, Federal Clean Water Act	Review and evaluation of applications, issuance of public notices, general coordination with other agencies at all levels, issuance or denial of permit.
	b.	Section 10, Rivers and Harbors Act of 1899	
	c.	National Environmental Policy Act	
	d.	Fish and Wildlife Coordination Act	
U.S. Department of Interior: Fish and Wildlife Service	a.	National Environmental Policy Act	Review and evaluation of projects from the standpoint of impacts on fish and wildlife.
	b.	Fish and Wildlife Coordination Act	
Environmental Protection Agency		Federal Clean Water Act	Review and evaluation of water quality and aquatic resource impacts. Has final authority regarding these concerns.
National Marine Fisheries Services		Fish and Wildlife Coordination Act	Review and evaluation of projects from the standpoint of impact on marine fisheries and shell fisheries

LOCAL REGULATIONS

The County's Natural Resources District regulations have been replaced within the Chesapeake Bay Critical Area with the Critical Area Ordinance as described in Chapter 2. County regulations also limit the extension of structures from the shoreline such as docks, piers, or boathouses to no more than 25% of the distance to the opposite shore or two hundred fifty (250) feet, whichever is less. Presently, marinas, boat launching facilities and storage and repair facilities are permitted by right in areas zoned B3, C1 or G1 (General Business, Commercial and General Industrial Districts) and by Special Exception in other areas.

TABLE 3-3

**STATE AGENCIES INVOLVED IN REVIEW OF
MARINAS AND OTHER WATER-DEPENDENT FACILITIES**

Agency	Authority	Function
Md Dept. of Environment	Title 16, Environment Article Tidal Wetlands	Reviews, evaluates, and prepares recommendations appls. for wetlands licenses and permits, issuance or denial of wetlands permits.
Md. Department of Environment Nontidal Wetlands Division	Title 9, Environment Article	Reviews and evaluates appls. for wetlands permits, coordination with COE for Section 404 Wetlands Joint Application Permits, issuance or denial of wetlands permits.
Board of Public Works	Tidal Wetlands Acts	Reviews and issues wetlands licenses for work in State wetlands. Provides advisory comments from State Wetlands Permits Division.
Department of Natural Resources Forest, Wildlife & Heritage Administration	Natural Resources Article Section 10.2A.03 and COMAR 27.01.09.03 COMAR 27.01.09.04 COMAR 27.02.05.12	Coordinating agency for review of wetlands permits for potential impacts to state rare, threatened or endangered species. Coordinating agency for review of potential impacts to colonial water bird nesting sites, historic waterfowl staging areas, and forest interior dwelling birds.
Maryland Department of the Environment	Federal Clean Water Act, Section 401 and 404	Reviews/evaluates COE permit appls. for compliance with water quality standards, issues Water Quality Certificates.
Department of Natural Resources Fisheries Service	COMAR 27.01.09.04 COMAR 27.02.05.12 Natural Resources Article Section 4.2.A.03	Coordinating agency for review of potential impacts to anadromous fish.

IV. MODIFICATIONS MADE TO LOCAL REGULATIONS AND MANAGEMENT PROGRAMS

As part of its Chesapeake Bay Critical Areas Overlay District, Harford County has instituted a planning process for the review and approval of proposed new or expanded water-dependent facilities. Proposed facilities will be reviewed to ensure their adverse impacts on water quality, water circulation regimes, wetlands, submerged aquatic vegetation and their important aquatic habitats, longshore transport, and the Buffer and other Habitat Protection Areas are minimized. The location of new marinas will be prohibited in areas designated as RCA. Appendix I contains a description of the information that will be required for proposals for water dependent facilities and the BMP's that new or expanded facilities will be required to utilize.

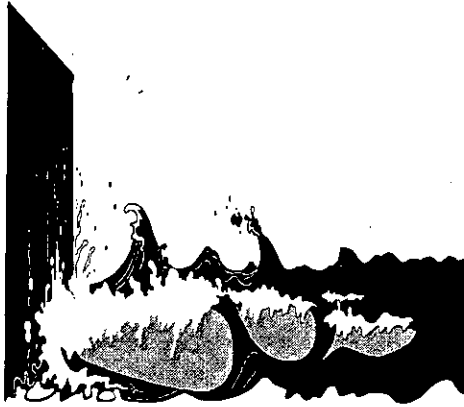
Provision has also been made in the Critical Areas Overlay District for review and approval by the Department of Planning and Zoning of community piers to ensure they meet the slip limitations of the Criteria, namely that they serve the residents of riparian subdivisions approved in accordance with the provisions of the Criteria (discussed in Chapter 2 and elsewhere); do not offer food, fuel, etc., for sale; provide adequate sanitary facilities, and are used instead of private piers.

The Overlay District Ordinance contains the following requirements for public beach areas or other public water-oriented recreation or education areas to be located in the Buffer including publicly owned boat launching and docking facilities:

- that adequate sanitary facilities exist;
- service facilities are, to the extent possible, located outside the Buffer;
- permeable surfaces are used wherever possible; and
- disturbance to natural vegetation is minimized.

Similarly, water-dependent research facilities and activities proposed for location in the Buffer are required to ensure that adverse impacts on water quality and significant fish, plant and wildlife habitat are minimized and that associated nonwater-dependent structures or facilities are located outside the Buffer.





CHAPTER 4

SHORE EROSION PROTECTION

I. REQUIREMENTS OF THE CRITICAL AREA CRITERIA

The Criteria require that local jurisdictions designate and map the following shoreline areas:

- Shoreline areas where no significant shore erosion occurs;
- Other eroding areas where nonstructural measures would be a practical and effective method of erosion control; and
- Eroding areas where only structural measures would provide effective and practical erosion control.

Significantly eroding areas are defined as those areas that erode two feet or more per year. The Criteria further provide that structural control measures shall be used only in areas where nonstructural measures are impractical or ineffective, and that where structural erosion control is required, the measure that best provides for conservation of fish and plant habitat and is practical and effective shall be used.

II. SIGNIFICANT ISSUES AND FACTORS

The following are the significant issues and factors regarding shore erosion protection:

- Designating and mapping areas in which the use of nonstructural measures would be practical and effective and those in which only structural measures would be practical and effective; and
- Establishment of a management program that would ensure that the priority-ranking of the Criteria established for the implementation of the various types of shore erosion measures is followed.

APPROPRIATE USE OF STRUCTURAL AND NONSTRUCTURAL MEASURES FOR SHORELINE EROSION CONTROL

As discussed in detail in Appendix J, shore erosion processes can be complex in nature. The rate and amount of erosion along a specific shoreline may vary from year to year. The Maryland Geological Survey has mapped historic erosion rates on U.S.G.S. 7" quad maps (scale 1"=2000') based upon a comparison of the shorelines that existed in the 1840s and 1940s, and where the information was available in the 1970's. These maps do not show any shorelines under the County's jurisdiction with a historic erosion rate of two feet or greater/year. It should be noted that most of the County's tidal shorelines, particularly those along the Chesapeake Bay, are located on the Aberdeen Proving Ground that is in the jurisdiction of the federal government. Significant portions of the County's shoreline are bordered by marsh areas, have no appreciable erosion, and thus need no shore erosion protection. Therefore, according to the Criteria, nonstructural measures should be the first type considered along the remainder of the shoreline when selecting an appropriate shore erosion protection measure. Thus, it is not meaningful to map areas along Harford County's shoreline where nonstructural measures would be appropriate and those where structural measures would be needed.

The final determination of whether nonstructural measure would be appropriate at a particular site will require infield analysis. Nevertheless, certain statements can be made as to whether nonstructural measures are likely to be appropriate in a given area. Along certain shorelines, the use of nonstructural measures may not be appropriate because of a predominance of existing structural measures or the presence of a water-dependent facility requiring a bulkhead for its operation. In determining whether vegetative stabilization should be utilized along other shoreline areas, the factors listed in Table 4-1 relating to fetch, shoreline configurations, shoreline orientation, width of beach and depth of beach substrate should be considered.

Nonstructural shore erosion protection can take several forms. The simplest method involves planting existing shores with marsh grass throughout the intertidal zones as well as above the high tide line. Such an approach is likely to be appropriate in cases where the shores are sandy, with an appropriate near-shore profile and a continued source of sand is available for long-shore transport. In other cases, a new shore may need to be created by adding and grading sandy fill materials along the shoreline so that the new shore is elevated to approximately 2.5 feet above the mean high tide at the face of the bank and sloped down to the existing shore on an approximately 10:1 grade. Stone containment structures are then usually placed at points along the shoreline to protect the newly created shore. Final stabilization of the new shore is achieved by planting appropriate vegetative materials. In other cases, new shores can be created by sloping the existing bank seaward or landward and placing stone containment structures at the edge of the new shore. Stabilization of the new shore is accomplished by planting appropriate vegetative materials. In all cases, at least six hours of direct sunlight alongshore is needed to ensure appropriate vegetative growth.

TABLE 4-1
VEGETATIVE TREATMENT POTENTIAL FOR ERODING TIDAL BANKS
IN THE MID-ATLANTIC STATES

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DIRECTIONS FOR USE

1. Evaluate each of the first four shoreline variables and match the site characteristics of the variable to the appropriate descriptive category.
2. Place the Vegetative Treatment Potential (VTP) assigned for each of the 4 variables in the right hand column.
3. Obtain the Cumulative Vegetative Potential for variables 1, 2, 3, & 4, by adding the VTP for each.
4. If it is 23 or more, the potential for the site to be stabilized with vegetation is very good and the rest of the table need not be used. If it is below 23, go to step 5.
5. Determine the VTP for shoreline variables 5 through 9 and obtain the cumulative VTP for variables 1-9.
6. Compare the cumulative VTP score with the Vegetative Treatment Potential at the bottom of this page.

SHORELINE VARIABLES	DESCRIPTIVE CATEGORIES The Vegetative Treatment Potential (VTP) Is Located in Upper Left Hand Corner of Each Category Box					VTP for Each Variable
	8	7	4	2	0	
1 Fetch: Average distance in miles of open water measured perpendicular to the shore and 45° either side of perpendicular to shore	Less than 0.5 miles	0.5 through 1.4 miles	1.5 through 3.4 miles	3.5 through 4.9 miles	Over 5 miles see footnote 1/	
2 General shape of shoreline for distance of 200 yards on each side of planting site.	8 Coves	3 Irregular shoreline	0 Headland or straight shoreline			
3 Shoreline Orientation: General geographic direction the shoreline faces	5 Any orientation less than one-half mile fetch	3 West to North	2 South to West	1 South to East	0 North to east	
4 Boat traffic: Proximity of site to recreational & commercial traffic	5 None	3 1-10 per week within 1/2 mi. of shore	2 More than 10 per week within 1/2 mi. of shore	1 1-10 per week within 100 yards of shore	0 More than 10 per week within 100 yards of shore	

Cumulative Vegetative Treatment Potential for Variables 1, 2, 3, & 4 _____

If this score is 23 or above, the potential for the site is very good and the rest of the table need not be used. If it is below 23, go to step 5 above.

5 Width of Beach Above Mean High Tide in Feet	3 Greater than 10'	2 10' through 7'	1 6' through 3'	0 less than 3'	
6 Potential Width ^{2/} of Planting Area in Feet	3 More than 20'	2 20' through 15'	1 14' through 10'	Less than 10' Do Not Plant	
7 On Shore Gradient % slope from MLW to toe of bank	6 Below 8%	3 8 through 14%	1 15 through 20%	0 over 20%	
8 Beach Vegetation	3 Vegetation below toe of slope	0 No vegetation below toe of slope			
9 Depth of Sand ^{3/} at Mean High Tide in inches	3 More than 10"	2 10" through 3"	0 Less than 3"		

Cumulative Vegetative Treatment Potential for Variables 1-9 _____

- 1/ Do not plant or see page 10 and figure 10 for possible exception.
- 2/ If tidal fluctuation is 2.5 feet or less, measure from MLW to toe of bank. If tidal fluctuation is over 2.5 feet, measure from MW to toe of bank. See page for more information.
- 3/ Refers to depth of sand deposited by littoral drift over the substrata.

VEGETATIVE TREATMENT POTENTIAL SCALE		Potential of Site to be
If the VIP is between and		Stabilized with Vegetation
40	33	Good
32	24	Fair
23	16	Poor
below 16		Do Not Plant

Source: U.S. Department of Agriculture, Soil Conservation Service, Vegetation for Tidal Shoreline Stabilization in the Mid-Atlantic States.

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The Criteria provide that nonstructural measures are to be used whenever possible in order to conserve and protect plant, fish and wildlife habitat. In cases where structural measures must be used, the measure that best provides for conservation of fish and plant habitat and which is practical and effective should be used. In most cases, the use of stone revetments (rip-rap) would be most appropriate. They can be designed to fit the existing shape and height of the shoreline and their sloping shape and rough surface reduce wave energy. Also, a revetment's increased surface area (compared to a bulkhead) and the irregularity of its face produce excellent habitats for marine animals and do not create a barrier to the movement between upland and water areas of indigenous animals normally found along the shoreline.

Thus, a provision has been added to the Chesapeake Bay Critical Area Overlay District requiring that nonstructural measures be given first consideration in addressing shore erosion problems, with revetments the generally preferred approach where structural measures are required. Provisions in the Overlay District require an Erosion Control Plan to be submitted to Planning and Zoning where structural measures must be used. The information required by the Army Corps of Engineers and the Department of the Environment for a 404 Joint Permit Application is sufficient for submission as an Erosion Control Plan.

III. EXISTING REGULATORY AND MANAGEMENT PROGRAMS

STATE AND FEDERAL REGULATORY PROGRAMS

STATE WETLANDS PERMIT/LICENSE

Building a shore erosion control structure usually involves construction at or channelward of mean high tide, and therefore, compliance with State requirements for wetlands alteration is necessary. The State Wetlands Law (Natural Resources Article, Section 9.101 et. seq.) requires property owners to obtain permission from the State before altering tidal wetlands. This includes: filling, dredging, and the construction of bulkheads, revetments, boat ramps, below-ground utilities, storm drain structures, groins, breakwaters, jetties, and similar structures or activities.

A State wetlands license is required from the Board of Public Works in the case of projects proposed below mean high tide. A State wetlands permit is required from the Department of the Environment (MDE) in the case of projects proposed shoreward of the mean high tide line that are subject to periodic flooding (at least once a year) and which support aquatic growth. In the case of both types of projects, application should be made to the Department of the Environment since it makes recommendations to the Board of Public Works on projects requiring a State wetlands license. In its review of such projects, MDE examines the project's potential adverse environmental impacts, particularly those affecting vegetated marsh areas and areas of submerged aquatic vegetation.

U.S. ARMY CORPS OF ENGINEERS PERMITS

A Section 10 and/or Section 404 permit from the U.S. Army Corps of Engineers is also likely to be required for installation of shore erosion control measures. In the use of nonstructural measures and revetment (rip-rap) structures, a general permit may be obtained which gives automatic approval to a project if certain conditions are met and State approval is obtained.

EROSION AND SEDIMENT CONTROL PLAN

If a shore erosion project involves any substantial soil disturbance, a sediment and erosion plan for the project must be approved by the Soil Conservation District and the County.

STATE TECHNICAL, AND FEDERAL ASSISTANCE PROGRAMS

NONSTRUCTURAL SHORE EROSION CONTROL PROGRAMS

One of the Chesapeake Bay Initiatives established by the Governor and the General Assembly in 1984 was the creation of a program of providing matching grants to property owners for the planting of marsh grass in suitable areas in order to control shore erosion. Funds from this program, called the Maryland Non-structural Shore Erosion Control Program, are presently distributed cooperatively by MDE, and the local Soil Conservation Districts (SCD) and the Maryland Resource Conservation and Development (RC&D). Property owners who receive interest free loans are free to select their own contractors to prepare design plans and complete nonstructural shore erosion control projects. Individual SCDs along with RC&D are serving as a source of technical information to property owners, and each financial assistance award is placed in escrow with the local SCD or RC&D for reimbursement to the property owner once the nonstructural shore erosion control project is satisfactorily completed.

Interest free loans for nonstructural shore erosion control projects can be applied to the following tasks:

- clearing of the shore of all fallen trees and debris;
- selected tree and shrub removal to obtain the necessary sunlight;
- "cut-and-fill" -- increasing the shore elevation by sloping or filling to eliminate interaction of tidal waters with the sloping bank face;
- installation, if necessary, of structures to contain the sloped or fill materials (groins, breakwaters, etc.);
- vegetating the new shore with marsh grass species;

- seeding new slopes above the maximum tide height; and
- seeding all lawn areas damaged by heavy equipment.

Techniques for performing these tasks are described in the USDA SCS technical manual, "Vegetation For Tidal Shoreline Stabilization in Mid-Atlantic States", and in the publication, "Maryland Standards Specifications for Soil Erosion and Sediment Control", which was published jointly by DNR Water Resources Administration, the SCS, and the State Soil Conservation Committee.

STATE SHORE EROSION CONTROL PROGRAM

The Shore Erosion Control Program of the Maryland Department of Natural Resources (DNR) provides technical and financial assistance to property owners with shore erosion problems. Under the authority of Natural Resources Article 8-1001 et. seq., individual landowners, municipalities and counties may apply for 15 year, interest-free loans for structural projects designed to control shore erosion or an 8 year interest free loan for non- structural projects. Landowners who do not receive loans can still receive technical assistance and advice from DNR.

Loans are awarded on the basis of available funds and a strict priority assessment established by DNR. Priority ratings are based on the rate of erosion, amount of siltation, the public benefit that would occur, the type of erosion at the property, and the date of application for the loan.

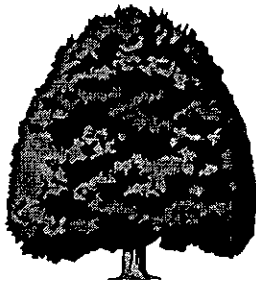
While SCD and RC&D supervise the design and construction of the structures it funds, continued maintenance is the responsibility of the property owner. State-funded structures are annually inspected by RC&D for the purpose of recommending to the owner any measures that may be needed to properly maintain them. Any property owner who has shore erosion problems can contact the Maryland Department of Natural Resources or Maryland Department of the Environment, by telephone or in writing to request a field inspection. The office responds to requests by inspecting the property to determine the seriousness of the erosion problem. If a serious problem exists, inspectors will give property owners a package which includes a loan application, and explain the loan process. Applications should include a copy of the deed and the plat. Due to the large number of applications, and the limited availability of loan funds, a long waiting period is common between the initial request for financial assistance and the award of a construction contract. In all cases, the field inspectors will assist property owners in determining the best method of controlling erosion. Inspectors can provide property owners with listings of engineers, contractors, and with other technical assistance and advice on controlling erosion.

All permits and licenses required for the construction of erosion-control structures must be obtained by property owners who finance their own projects. For those property owners receiving State financial assistance, the Shore Erosion Control Program acts as the property owner's representative on all permit applications.

IV. MODIFICATIONS MADE TO LOCAL REGULATIONS AND MANAGEMENT PROGRAMS

Harford County's approach to ensuring that appropriate shore erosion protection measures are used along its shorelines is two fold. As mentioned previously, a provision has been included in the Chesapeake Bay Critical Area Overlay District requiring that in addressing shore erosion problems, consideration be given first to nonstructural measures, then to revetments, with bulkheads to be used only if the first two types of measures would be impractical or ineffective or where they are needed as part of a water-dependent facility. Secondly, a public awareness/educational program has been undertaken for landowners with eroding shorelines in order to let them know that nonstructural measures are generally the preferred approach and that interest free funding can be obtained from the State Nonstructural Shore Erosion Control Program.





CHAPTER 5

FOREST AND WOODLAND AREAS

I. REQUIREMENTS OF THE CRITICAL AREA CRITERIA

The maintenance and protection of forested areas is a major objective of the Chesapeake Bay Critical Area Program Development Criteria. Forested areas are considered important because of their value for water quality protection (through sediment and nutrient removal, shading of streams, etc.), wildlife habitat, watershed protection, recreation, timber production and aesthetic enhancement.

The Criteria recognizes two types of forested areas: forests and developed woodlands. Forests are defined as "biological communities dominated by trees and other woody plants covering a land area of one or more acres." Developed Woodlands are defined as "those areas of one acre or more in size which predominantly contain trees and natural vegetation and which also include residential, commercial, or industrial structures and uses." The same types of protective measures are required for those forested areas designated as forest and those designated as developed woodlands.

The Criteria specify the following requirements regarding forested areas in the Critical Area. In addition, it should be noted that Chapter 2 contains other requirements regarding limitations on the clearing of forested areas for development, and the requirements for forest replacement under specific conditions:

- Identification and mapping of forests and developed woodlands in the Critical Area;
- Identification of forested areas that include Habitat Protection Areas (see Chapter 9);
- Utilization of programs to provide incentives for the conversion of other land uses to forested conditions;
- Development of Forest Management Plans for all timber harvesting occurring within a year that affects one acre or more of forest or developed woodland. Such plans are to be prepared by a professional forester registered in the State of Maryland and submitted to, and approved by the Maryland Department of Natural Resources (DNR) through the County Forestry Board and project forester. The plan is then filed with the Department of Planning and Zoning. Such plans are to include measures to protect surface and groundwater quality, Habitat Protection Areas, and the continuity of habitat (particularly through scheduling the location, size, timing and intensity of harvest cuts, and through the use of afforestation and

reforestation). Appendix F, as amended describes the information required for a Forest Management Plan;

- Development of sediment control plans for all timber harvests involving 5000 square feet or more land disturbance, including those undertaken on agricultural land. Such harvesting operations are to be implemented in accordance with the specifications contained in the document, *Guidelines, Standards and Specifications for Soil Erosion and Sediment Control for Forest Harvest Operations* and any additional specifications established by DNR. In many cases, a Standard Soil Erosion and Sediment Control Plan that has been developed by the State can be used to meet this requirement. Compliance with such plans is to be enforced by the Department of Natural Resources and Harford County; and
- Preparation of Buffer Management Plans for any cutting or clearing of land within the Critical Area Buffer, including any expanded Buffer areas. Such plans are to be prepared by a forester registered in the State of Maryland and approved by DNR and must contain the following provisions. However, single-family residential lots of record may submit a modified Buffer Management Plan, completed by the property owner, as specified in Appendix F of the Harford County Chesapeake Bay Critical Area Management Program.
 - 1) No cutting occurs within 50 feet of tidal waters, perennial tributary streams, or tidal wetlands;
 - 2) Cutting does not involve creation of logging roads or skid trails within the Buffer;
 - 3) Nontidal wetlands and other Habitat Protection Areas are not disturbed;
 - 4) Disturbance to stream banks and shorelines are avoided;
 - 5) The area disturbed or cut is replanted, or allowed to regenerate in a manner that assures the availability of cover and breeding sites for wildlife, and reestablishes the wildlife corridor function of the Buffer; and
 - 6) Commercial harvesting of trees by any method can be undertaken to the edge of intermittent streams provided provisions 1 through 5 above are followed.

II. SIGNIFICANT ISSUES AND FACTORS

The following are the major issues/factors pertaining to forested areas in the Critical Area (other than those discussed in Chapter 2 relating to development activities):

- Identification and mapping of forested areas in the Critical Area, including those containing Habitat Protection Areas;
- Implementation of programs to encourage conversion of other lands to forested conditions;

- Development of forest management plans and sediment control plans for timber harvesting activities in the Critical Area, including provision for the harvesting of timber in the Buffer.

IDENTIFICATION AND MAPPING OF FORESTED AREAS IN THE CRITICAL AREA

With the assistance of representatives of DNR, forested areas were mapped by the Society of American Foresters (SAF) forest cover type and size classification through aerial photography interpretation and selective site visits. Table 5-1 shows the acreage of each forest type in Harford County's Critical Area as mapped in 1986. The information on forest cover developed by the MFS was used to develop overlays to the County's tax maps that show the location and extent of forests. Forested areas were remapped in digital format during the 1995 Comprehensive Review of the Critical Area Program. The vegetation layer of the GIS was used to map the extent of forest, as determined from aerial photographs taken in 1990. This map provides a valuable information base that the County and local representatives of the MFS can use to ensure that development and timber harvesting activities in forested lands are undertaken in compliance with the provisions of the Criteria.

It should be noted that the information shown on these maps will have to be refined by information obtained by field investigation at the time an individual Forest Management Plan is developed.

PROGRAMS TO ENCOURAGE WOODLAND STEWARDSHIP

The County's Urban Forestry Program, is the main mechanism for promoting the creation of new forested areas. Through this program, emphasis is placed on revegetating areas within the 100-foot Buffer adjacent to tidal waters and perennial and intermittent streams beyond the Critical Area. This will promote the stabilization of eroding lands and the planting of trees and shrubs in developed areas to create wildlife habitat. Cooperative efforts with community associations will be undertaken to locate unstable areas and to carry out the actual planting and cultivation of the trees, shrubs and other appropriate vegetation.

In addition, as discussed in Section III, DNR administers a number of incentive programs that can be used to promote afforestation, reforestation and forest protection efforts in the Critical Area. These programs include Forest Conservation and Management Agreements, the Woodland Incentive Program, the Tree Farm Program and the Roadside Tree Law. In addition, owners of forested areas may be eligible for income tax deductions, cost-share programs of the Agricultural Stabilization and Conservation Service, and cost-sharing of seedling plantings with a local pulpwood company.

TABLE 5-1
ACREAGE AND DISTRIBUTION OF SAF FOREST COVER TYPES
IN HARFORD COUNTY'S CRITICAL AREA (1987)

SAF#	FOREST COVER TYPE	ACRES				TOTAL
		SAWTIMBER	POLE	SAPLING	SUCCESSIONAL	
52	White oak-Black Oak - Northern Red Oak	343	1	0	0	344
59	Yellow Poplar - White Oak - Northern Red Oak	935	32	5	0	972
57	Yellow Poplar	464	39	32	2	537
44	Chestnut Oak	185	0	0	0	185
61	River Birch - Sycamore (Boxelder - Ash)	553	16	12	0	581
94	Sweetgum - Sycamore - American Elm	338	40	24	5	407
87	Sweetgum - Yellow Poplar	200	86	6	0	292
28	Black Cherry - Red Maple	33	49	80	0	162
50	Black Locust	23	3	4	16	46
108	Red Maple	9	11	34	20	74
93	American Elm - Green Ash - Sugarberry	52	10	0	0	62
79	Virginia Pine	30	0	2	0	32
95	American Beech - Sugar Maple	31	0	0	0	31
95	Black Willow	6	0	0	0	6
92	Sweetgum - Willow Oak	5	0	0	0	5
21	White Pine, Planted	19	0	0	0	19
15	Red Pine, Planted	0	2	0	0	2
52-44	Chestnut Oak - White Oak - Red Oak	22	0	0	0	22

59-87	Sweetgum- Yellow Poplar - Northern Red Oak - White Oak	8	0	0	0	8
<u>SAF#</u>	<u>FOREST COVER TYPE</u>	<u>SAWTIMBER</u>	<u>POLE</u>	<u>SAPLING</u>	<u>SUCCESSIONAL</u>	<u>TOTAL</u>
108-94	Red Maple - Sweetgum	40	4	17	0	61
57-61	Yellow Poplar - Sycamore	9	0	0	0	9
OTHERS:						
	American Holly	5	2	0	0	7
	Paulownia	0	5	0	0	5
	Successional*	0	21	0	27	48

*A mixture of Sumac, Red Maple, Black Locust, Black Cherry, no one species or group of species showing a majority.

<u>DEVELOPED WOODLANDS TYPES:</u>	52S	6	
	87S	12	
	92S	11	
	44S	<u>6</u>	
		35	TOTAL ACRES

Total Forested Acres Mapped - 3952

DEVELOPMENT OF FOREST MANAGEMENT PLANS AND SEDIMENT CONTROL PLANS FOR TIMBER HARVESTING ACTIVITIES IN THE CRITICAL AREA

Forest Management Plans are already developed on a voluntary basis for timber harvesting activities in the State of Maryland and are required as a condition for participation in many of the incentive programs noted above. As discussed in more detail in the next section, sediment control plans are already required for all timber harvesting activities that disturb an area of 5000 square feet or greater.

The Criteria made the development of Forest Management Plans mandatory for all timber harvesting activities in the Critical Area. Particular emphasis is to be placed on preserving the water quality and wildlife habitat values of the forested areas to be cut. Thus, information on the topographic conditions (soils, slope, presence of perennial and intermittent streams, etc.) and natural features (nontidal wetlands and the other Habitat Protection Areas) present on a site must be considered in addition to information on tree canopy and understory species composition, dominant timber size class, stocking level, aerial coverage, and similar information used to characterize a forest stand.

The plan must provide protection of the water quality and wildlife habitat values of the forested areas through specifying the size, location, timing and intensity of harvest operations as well as appropriate afforestation and reforestation measures. Measures to ensure protection of the Habitat Protection Areas noted in Chapter 9 need to be included, as well as those needed for the protection or establishment of wildlife corridors. Wildlife corridors are strips of land having vegetation that provide cover and safe passageway for wildlife between forested areas, and thus provide continuity of habitat. The Sediment Control Plan for a proposed forest harvest operation should be reviewed in conjunction with the Forest Management Plan to be sure it is consistent with the recommendations of the Forest Management Plan regarding protection of wildlife habitat and water quality values.

If harvesting of trees is proposed within the Critical Area Buffer and any expanded Buffer areas, the Plan must include special provisions to ensure maintenance of the integrity of the Buffer including the following:

- the use of selective cutting;
- no cutting of areas within 50 feet of tidal waters, tidal wetlands, and perennial streams or in Habitat Protection Areas; and
- keeping the logging roads and skid trails outside the Buffer.

Appendix F, as amended contains more detailed information on the necessary components of a Forest Management Plan and the characteristics of different tree species regarding their desirable soil conditions, growth characteristics, and wildlife values.

The following procedure is applied for the review and approval of Forest Management Plans for areas within the Critical Area. Plans that do not involve cutting in the Buffer or Habitat Protection

Areas may be conditionally approved by the Project Forester after his review of the Plan for accuracy, completeness and consistency with the provisions of the County's Critical Area Management Program. The Project Forester must review all of these types of plans within one week of receipt of such plans. Copies of such conditionally approved plans shall be sent to the District Forestry Board and the Department of Planning and Zoning for their review and possible comments. If no adverse comments are received within two weeks after submittal of the Plans to the Board and the Department, such Plans can be considered formally approved. Failure to act within two weeks of submittal on this type of plan will be deemed conditional approval of the Plan.

If a harvest will occur within the Buffer or in a Habitat Protection Area, the Project Forester must review the plan with the Forestry Board within four weeks. The Department of Planning and Zoning will also review these plans for adequacy of the measures proposed to ensure maintenance of the integrity of the Buffer and/or Habitat Protection Area(s). The Board then has five days to approve or reject the Plan. Failure to act within five weeks of submittal will be deemed conditional approval of the Plan.

Associated sediment control plans will be sent to the Soil Conservation District for formal approval after review by the Project Forester for consistency with the Forest Management Plan and the Management Program.

III. EXISTING REGULATORY AND MANAGEMENT PROGRAMS

FORESTRY INCENTIVE PROGRAMS

In addressing the requirements of the Criteria, Harford County will utilize the following existing programs that promote the retention or conversion of lands as forestland.

FOREST CONSERVATION AND MANAGEMENT AGREEMENT PROGRAM

The Forest Conservation and Management Agreement (FCMA) Program is a voluntary program administered by the Maryland Department of Natural Resources for owners of contiguous forested parcels of five acres or more excluding the home site. The intent of this program is to preserve forestlands from alternative uses and conserve the resource using the principles of scientific forest management. Under this program, the property owner's tax assessment is reduced to or kept at an agricultural land assessment. To be eligible, a property owner must agree to follow an approved Forest Management Plan prepared by a registered professional forester for at least fifteen years. Newly planted land must be fully established (400 live, well-spaced seedlings per acre) for one year before it qualifies.

WOODLAND INCENTIVES PROGRAM

The Woodland Incentives Program (WIP), also administered by DNR, provides up to 50% of the cost

of reforestation, afforestation, and timber stand improvement. Nonindustrial, private woodland owners are eligible for the program if they own 10 - 500 contiguous acres of private woodland that is capable of producing crops of commercial timber (20 cu. ft./acre/year). The landowner must have a Forest Management Plan that describes and specifies the location of the property on which the practices are to be implemented, and documents the landowner's commitment to use cost-share funds to implement the practices. The landowner must not be applying for, or receiving federal cost-share for the same practice on the same acreage, and must agree to limit cost-share funds to a maximum of \$5000 each year or \$15,000 for a three-year accomplishment. The owner must also commit to at least fifteen years of management, and allow access to his/her property for periodic inspections.

Buffer Incentive Program

The Buffer Incentives Program has been established to encourage the planting and maintenance of forested buffers around the Chesapeake Bay and its tributaries throughout Maryland. Landowners who plant and maintain forested buffers will be eligible for a one time \$300 per acre grant. To qualify for a Buffer Incentives Program grant, a landowner has to meet several criteria. The proposed planting area needs to be one acre or more in size, but not more than 50 acres; be within 300 feet of a stream, river, pond, wetland or other open water or, be within the 100 year floodplain as shown on the flood insurance maps. The landowner must agree to maintain the planting as designated by the forester and otherwise care for and preserve the trees for at least 10 years. Applications should be completed by October for trees to be planted the next spring.

TREE-MENDOUS MARYLAND PROGRAM

The primary purpose of this program is to expand tree-planting efforts by encouraging corporations, community groups, service organizations, and individuals to invest in tree planting. Individuals can purchase trees in honor or in memory of friends or loved ones that are planted in memorial groves in the region where the honoree lives/had lived. Community groups can purchase trees for planting on public open spaces. Corporations and businesses can make a donation to the Governor's Cloverleaf Planting Program to provide for tree planting at all appropriated interchanges on State highways.

CONSERVATION RESERVE PROGRAM (CRP)

This is a federal incentive program to convert highly erodible land from agricultural commodity production to less intensive uses, such as pasture, permanent grass, legumes, forbs, shrubs, or trees, or other permanent wildlife cover. Cost-share funding of 50% is available to agricultural producers for tree establishment, as well as annual rental payments for ten years while the practice is being maintained. A Conservation Plan, which covers 10-15 years, must be developed with, and approved by the Soil Conservation Service.

CONSERVATION RESERVE ENHANCEMENT PROGRAM (CREP)

This is a federal-state initiative that pays farmers and landowners to remove environmentally sensitive cropland from production and plant streamside buffers or create wetlands. Landowners must sign a contract agreeing to take these sensitive lands out of production for a 10 to 15 year period. During this time they must agree to maintain grass, shrubs, trees or wetlands. CREP offers a one time sign-up bonus of \$200 to \$250 an acre, plus a soil rental rate. An additional \$10 per acre maintenance fee is available throughout the life of the contract. Participants in this program also have the option of selling a permanent easement on their land to the State of Maryland. This can be done directly, or through cooperative contracts with the Rural Legacy Program. The local soil conservation district, the Department of Natural Resources, local government, or local land trust may administer the easements. This program also provides cost sharing for the installation of best management practices on lands enrolled in CREP.

STATE CONSERVATION RESERVE PROGRAM

Patterned after the federal Conservation Reserve Program, Maryland's CRP is designed to complement the federal program by offering added incentives. Piggy-backed on the federal program, the State CRP offers \$20 per acre for land in the Critical Area or adjacent to wetlands and waterways. An additional \$100 per acre is available when the landowner chooses to plant tree seedlings.

FOREST LEGACY PROGRAM

The Maryland Forest Legacy Program will pay willing private landowners fair market value to acquire permanent conservation easements on their forest lands. To be eligible, the private forestland must be located within a Forest Legacy Area. Forest Legacy Areas must contain forestlands that are at risk for conversion to nonforest uses. Also, these areas must provide one or more important public values, such as scenic beauty, recreation, streamside forests, fish and wildlife habitat, and threatened and endangered species. Finally, Forest Legacy Areas must allow for the continuation of traditional forest uses, such as forest management. To participate in the Forest Legacy Program, a person whose forestland is within a Forest Legacy Area will take two steps. First, the landowners sell or transfer some land rights, e.g., development right or public access rights, while retaining ownership and the right to use the property in any way consistent with the easement. Second, the landowners participate in Maryland's Forest Stewardship Program through the development of Forest Stewardship Plans, if they plan to manage an easement area.

Private landowners may contact their local forester for information on how to apply to the Forest Legacy Program. Applications will be prioritized and applicants will be notified if the Forest Stewardship Coordination Committee and Forest Service approve the application.

CONSERVATION EASEMENTS

The Maryland Environmental Trust is authorized to grant permanent easements on large acreages and significant habitat areas. Conditions for management are negotiable. An easement donation is eligible for certain tax benefits.

MARYLAND AGRICULTURAL COST SHARE

The Maryland Department of Agriculture's program for control of water pollution provides cost-share assistance for approved Best Management Practices, including windbreaks and buffers, to control water pollution from soil erosion, nutrient runoff, and animal waste on agricultural land.

TREE FARM PROGRAM

The Tree Farm Program is a voluntary program administered in cooperation with the American Forest Council for property owners who have at least 10 acres. The purpose of the Tree Farm Program is to promote forestry awareness and forest stewardship through public education and through the recognition of landowners who enhance their forest resources using sound forest management practices. To be eligible, a property needs a written Forest Management Plan by a registered professional forester and a record of active management of the property as a tree farm.

GLADFELTER PULPWOOD COMPANY PROGRAM

The Gladfelter Company provides a 50% cost-share program on seedling orders from 2,000 to 20,000 trees (while funding lasts).

INCOME TAX DEDUCTIONS

The Federal Income Tax Regulations allow limited annual deduction of operating or investment costs with special treatment for reforestation expenses. The regulations also allow the depletion of the owner's investment at the time of a timber harvest. In addition, public law 96-451 permits up to \$10,000 of capitalized reforestation costs each year to be eligible for a 10% tax credit (subtracted from taxes owed) and 7-year amortization (subtracted from gross income to compute adjusted gross income).

The State Income Tax Regulations allow owners or lessees of 10 - 500 acres of commercial forestland that is capable of growing more than 20 cu. ft./acre/year to deduct double the cost of reforestation or timber stand improvement operations from their federal adjusted gross income on their State Income Tax.

REGULATORY PROGRAMS**CHESAPEAKE BAY CRITICAL AREA MANAGEMENT PROGRAM**

The Critical Area Management Program requires replacement of forests lost to development within

RCA and LDA through mitigation on either a 1:1 or 1:1.5 basis. Forests cleared in violation of the Critical Area regulations must be replaced by mitigation at a rate of 1:3.

STATE REFORESTATION LAW (NR 5-103)

In 1988, the General Assembly passed legislation that requires the State to mitigate the loss of forestland from state-funded construction projects. In 1989, the legislation was amended to include all governmental units within the State and projects (low income housing), which receive State funds. The law does two things. First, it requires that forest loss be minimized when possible through adjustments in construction plans. If designs cannot be changed and forestland is lost, that loss must be replaced on a 1:1 basis on other government lands.

SEED TREE LAW (NR 5-501)

The basic objective of the seed tree law is to ensure reforestation of cutover land. The law applies to areas of five acres or more where loblolly, short leaf, or pond pines constitutes 25% or more of the live trees on each acre. The law requires seed trees be left uncut for three years following a timber harvest. Landowners can clearcut, however, only after securing approval from the State Forester by agreeing to carry out an effective reforestation plan.

ROADSIDE TREE LAW

The purpose of this law is to ensure proper care of roadside trees in the interest of promoting and maintaining healthy trees and safe, unobstructed, and aesthetically pleasing public roads and rights-of-way. Any tree that grows all, or-in-part, within right-of-way of any public road is considered a roadside tree. Under this law, a person may not undertake any treatment to any roadside tree without a permit from MFS except if the tree is uprooted, branches are broken and contacting wires, if the tree is in a condition that presents an immediate danger to persons or property, or if the tree is along an unimproved dirt road.

SEDIMENT CONTROL REGULATIONS

As a result of modifications to the Sediment Control Regulations in 1984, forest harvesting operations were explicitly included under the provisions of the State Sediment Control Program. Any forest harvest operations disturbing more than 5,000 square feet of land or crossing a stream with a drainage area greater than 400 acres, or 100 acres for a trout stream, must have a sediment control plan (Forest Harvest Permit). The Soil Conservation District, Harford County Department of Planning and Zoning, and the Harford County Department of Public Works, Sediment Control Division must sign the Forest Harvest Permit.

A Standard Sediment Control Plan has been developed by the State Department of Natural Resources

that can be used instead of a customized plan if: (1) road cuts or fills are less than 3 feet, (2) grades for roads and trails are less than 15%, and (3) landings are located on slopes less than 10%. Among other provisions, the Standard Plan requires:

- Stabilization of access points to a site;
- Uncut buffer zones of at least 50 feet to perennial or intermittent streams, rivers, lakes, ponds, bogs or marsh with an additional buffer required as the slope on the adjacent land increases. Cutting within the Critical Area Buffer is allowed in accordance with a special Buffer Management Plan designed by a registered professional forester in accordance with guidelines established by the DNR;
- The laying out of haul roads and skid trails along natural land contours to avoid excessive cuts, hills and grades;
- The avoidance of crossing of perennial or intermittent streams whenever possible with temporary bridges or culverts installed in cases. Where such crossings cannot be avoided (in the case of streams draining 400 acres or more or designated trout streams draining 100 acres or more, a permit from the Maryland Department of the Environment is required for such temporary crossings); and
- The prohibition of haul roads or skid trails in the buffer area except those needed to provide access to required stream crossings.

IV. MODIFICATIONS MADE TO LOCAL REGULATIONS AND MANAGEMENT PROGRAMS

CHESAPEAKE BAY CRITICAL AREA OVERLAY DISTRICT

To be consistent with the provisions of the Criteria pertaining to forested areas, the County has established a Forest and Woodland Protection Program with the following components:

- A Forest Incentives Element consisting of the County's Urban Forestry Program and application of the Forest Incentives Program described above in order to promote the maintenance of areas in a forested condition and to promote the conversion of other land areas to a forested condition;
- A Forest Conservation Element consisting of application of the Roadside Tree Law and the measures described in Chapter 2, particularly the use of Forest Conservation Plans, in order to minimize the clearing of forested areas for development purposes and requiring their replacement if the development occurs in an area designated as Limited Development Area or Resource Conservation Area;

- A Forest Management Element requiring the development of Forest Management Plans for timber harvesting activities in the Critical Area including those on agricultural lands. Such plans include provisions that recognize the Criteria limitations on harvesting operations and provide protection for areas identified as Habitat Protection Areas, as well as ensuring the maintenance of the forest areas for water quality protection and wildlife habitat values. Appendix F, as amended contains a copy of a draft Memorandum of Agreement that specifies the roles of the MFS and the County Department of Planning and Zoning in implementing this element.

This program was instituted through the Subdivision Regulations, and by inclusion of appropriate provisions in the Chesapeake Bay Critical Area Overlay District. Also, a modified Standard Sediment Control Plan was developed for forest harvesting operations in the Critical Area in order to reflect the Criteria's requirement for a minimum 100-foot Buffer in which hauling roads or skid trails are not permitted, and in which no cutting can occur within 50 feet of tidal waters, tidal wetlands or perennial streams.





CHAPTER 6

AGRICULTURAL ACTIVITIES

I. REQUIREMENTS OF THE CRITICAL AREA CRITERIA

"Agriculture" is described by the Criteria as "all methods of production and management of livestock, crops, vegetation, and soil. This includes, but is not limited to, the related activities of tillage, fertilization, pest control, harvesting, and marketing. It also includes, but is not limited to, the activities of feeding, housing, and maintaining of animals such as cattle, dairy cows, sheep, goats, hogs, horses, and poultry and handling their by-products."

The objectives of the Criteria with respect to agricultural activities are to maintain agricultural lands in agricultural use to the maximum extent possible, and to ensure that agricultural activities do not adversely affect water quality or important plant and wildlife habitats identified as Habitat Protection Areas (see Chapter 9). With respect to the first objective, local governments are to develop measures for encouraging the preservation of agricultural lands. With respect to the second objective, local governments are to ensure that:

- New agricultural land is not created by:
 - 1) destruction of seasonally flooded or palustrine wetlands with seasonally flooded or wetter water regimes;
 - 2) clearing of forest or woodland on slopes greater than 15% or on highly erodible soils;
 - 3) clearing of land that would adversely affect areas identified as Habitat Protection Areas, and clearing of natural vegetation in the Critical Area Buffer;
- Animal feeding operations (including retention and storage ponds, feed lot waste storage, and manure storage) minimize the contamination of water bodies;
- Habitat Protection Areas on agricultural lands are protected;
- Forest Management Plans are developed for timber harvesting on agricultural lands; and
- Soil and Water Conservation Plans are developed and implemented on all farms in the Critical Area by 1991 (5 years after adoption of the Criteria).

There are special provisions of the Criteria relating to undertaking agricultural activities in the Critical Area Buffer, in addition to the prohibition on the clearance of natural vegetation noted above. A 25-foot vegetated "filter strip" comprised of trees with a dense ground cover or a thick sod grass is to be maintained adjacent to tidal waters or tidal wetlands, the width of which is to be expanded by a distance of 4 feet for every 1 percent of slopes greater than 6 percent. The Criteria allow the use of authorized measures to control noxious weeds including Johnson grass, Canada thistle and multiflora rose, if they occur in the filter strip. In addition, the feeding or watering of livestock is prohibited within 50 feet of tidal waters, tidal wetlands, or tributary streams and all farming activities, including the grazing of livestock are not to disturb stream banks, tidal shorelines, or Habitat Protection Areas. This requirement is not interpreted as requiring the fencing of streams unless a significant water quality problem exists.

II. SIGNIFICANT ISSUES AND FACTORS

The following are the major issues/factors associated with agricultural activities in the Critical Area:

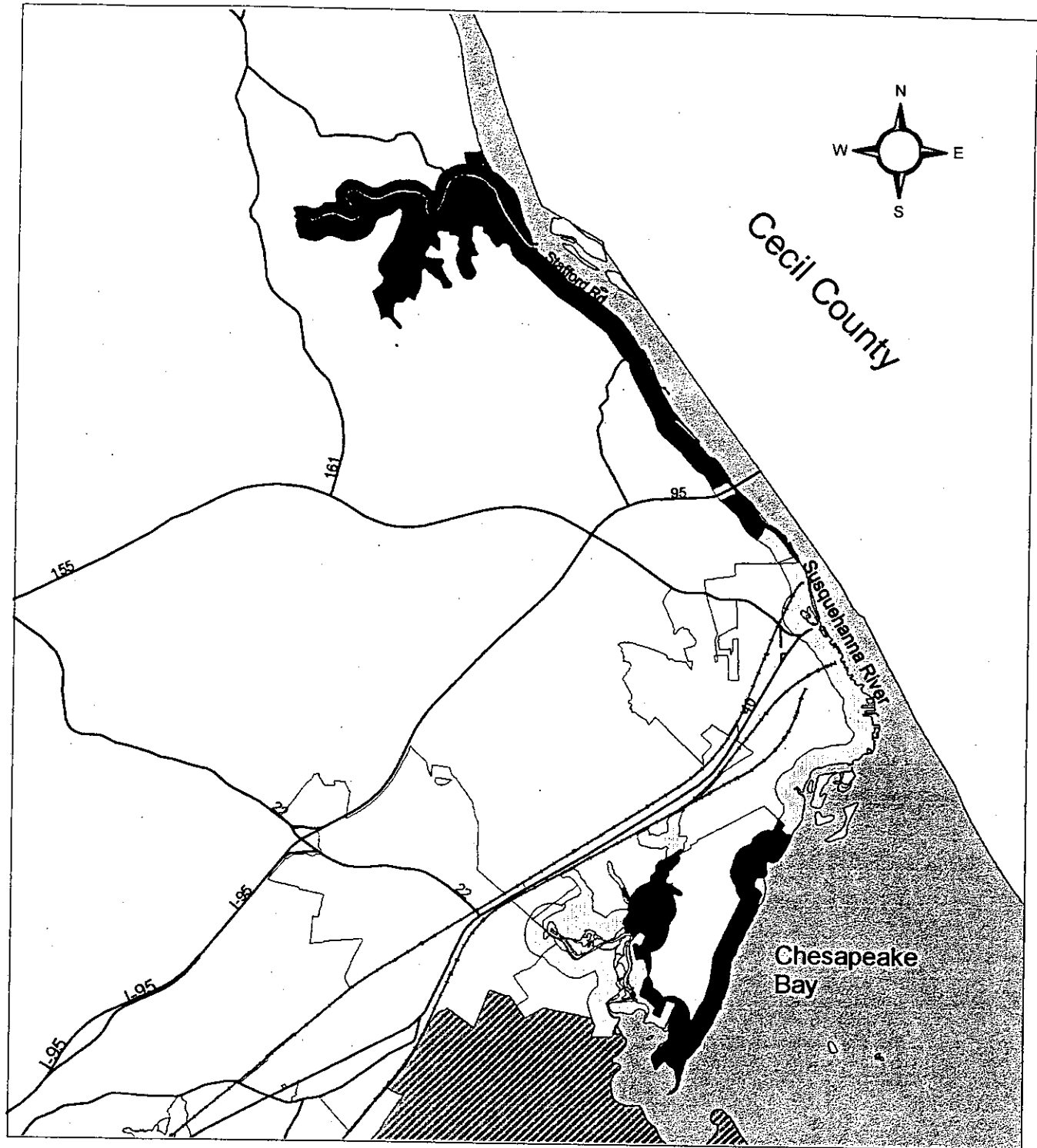
- Identification, inventory and mapping of agricultural lands in Critical Area;
- Development of measures for maintaining agricultural land in agricultural use;
- The development and implementation of soil and water conservation plans that ensure that Habitat Protection Areas are protected, and impacts on water quality are minimized;
- Development of Forest Management Plans for timber harvesting on farms that are consistent with the provisions of the criteria; and
- Development measures to ensure that agricultural activities, particularly agricultural feeding operations do not adversely affect water quality.

INVENTORY AND MAPPING OF AGRICULTURAL LANDS

With the assistance of the County Agricultural Preservation specialist and the Soil Conservation District, the agricultural lands in the Critical Area were identified and mapped (See the Land Use Overlay Map Series). These agricultural lands fell into two categories: active farms and land leased for agricultural activities on an interim basis whose ultimate purpose was nonagricultural (land in State and local parks, the site of the future Baltimore Gas and Electric power plant, etc.). The main crop type was grain with some beans, hay grain, and some livestock being kept on several farms. As a result, there are no significant problems associated with animal waste operations in the Critical Area. Figures 6 and 7 show the location of farmed lands in the Critical Area of Harford County.

FIGURE 6

01-36



■ Agricultural Zoned Lands

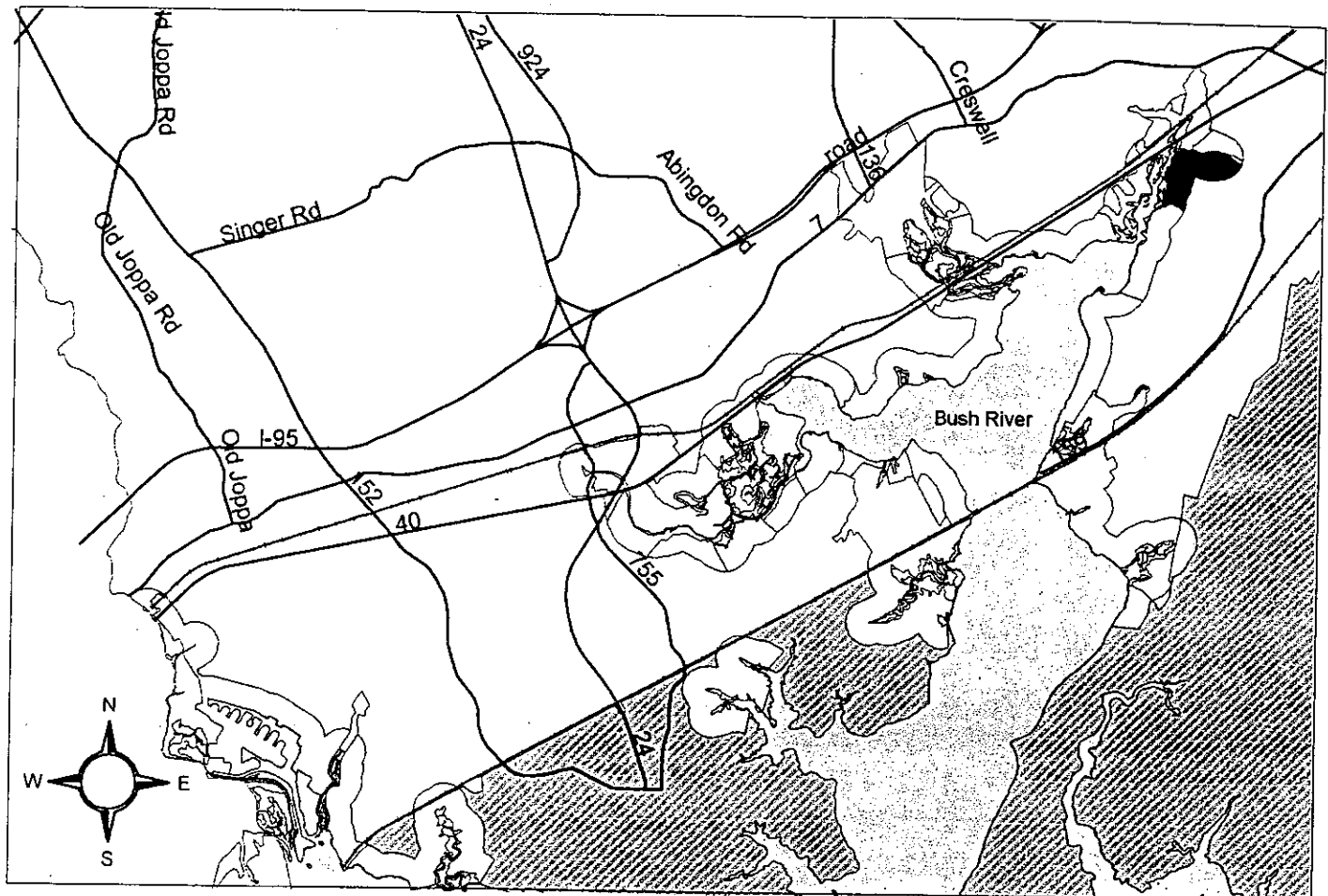
▨ APG

Agricultural lands in the Susquehanna River and
Swan Creek portions of the Critical Area

1.5 0 1.5 3 Miles

1 INCH = 1.5 MILES

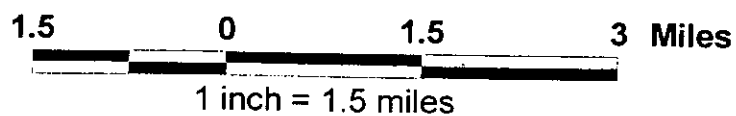
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FIGURE 7

Agricultural lands in the Gunpowder River and
Bush River portions of the Critical Area

■ Agricultural Zoned Lands

▨ APG



DEVELOPMENT OF MEASURES FOR MAINTAINING AGRICULTURAL LAND IN AGRICULTURAL USE

The majority of the agricultural lands in the Critical Area are zoned Agricultural which allows a development density of one unit per 10 acres. All of the agricultural lands have been included in the RCA portion of the Critical Area Overlay District and have a density of one unit per 20 acres. As discussed in the next section, the County has an active agricultural land preservation program. One farm in the Critical Area has accepted an offer from the Maryland Agricultural Land Preservation program.

SOIL AND WATER CONSERVATION PLANS

The last three relating to protection of Habitat Protection Areas, development of Forest Management Plans and protection of water quality are already being addressed by the Soil Conservation District (SCD). The SCD worked with owners or operators of agricultural lands in the Critical Area to develop Soil and Water Conservation Plans. Plans have been developed for all the agricultural properties in the Critical Area. These plans address habitat protection and water quality concerns and refer property owners to the local office of DNR concerning the need for development of a Forest Management Plan prior to considering any commercial timber harvesting. The Conservation Provisions of the 1985 Federal Farm Bill, discussed in the next section, were addressed in the preparation of such plans.

It is expected that this cooperative approach with landowners in the development and implementation of Soil and Water Conservation Plans will fully address the requirements of the Criteria regarding agricultural operations. If enforcement action is necessary to address water quality problems, the procedures discussed in the next section that have already been established by the State Office of Environmental Programs and Department of Agriculture will be utilized. If the situation arises, the destruction or inappropriate alterations of identified Habitat Protection Areas on agricultural lands can be considered a violation of the Critical Area Overlay District and can thus be pursued as a zoning violation.

III. EXISTING REGULATORY AND MANAGEMENT PROGRAMS

COOPERATIVE SOIL AND WATER CONSERVATION PLAN DEVELOPMENT AND IMPLEMENTATION

As noted previously, the development of Soil and Water Conservation Plans through a cooperative effort between the Harford County Soil Conservation District and owners of agricultural lands will be the keystone of the County's efforts to address the provisions of the Chesapeake Bay Critical Area Program Development Criteria relating to agricultural activities.

Financial assistance from the State's Agricultural Cost Share Program will be sought to help finance the implementation of measures needed to address water quality concerns identified in the Soil and Water Conservation Plans. The Cost-Share Program provides funding for such measures (called

Best Management Practice (BMP's) up to 87 1/2 % of the total cost with a \$20,000 limit per measure and a \$75,000 limit per farm. Funding may also be sought from a similar cost-sharing program - EQUIP. EQUIP is a federal cost-share program that provides up to \$50,000 for best management practices. Projects are targeted within priority watersheds and are ranked with the highest priority being given to projects dealing with animal waste management.

The procedures for development of the Soil Conservation and Water Quality Plans and the implementation of recommended measures are already in place and are being utilized.

COUNTY AGRICULTURAL PRESERVATION PROGRAM

Harford County has been an active participant in the State Agricultural Land Preservation Program since 1977. The program is jointly administered by the Board of Trustees of the Maryland Agricultural Land Preservation Foundation, the local Agricultural Advisory Board, and local planning and government officials. The program is voluntary and involves the creation of Agricultural Preservation Districts, and the sale of development rights easements.

Harford County is a matching fund participant in the program. The County provides 40% of the funds and the State provides 60% of the money required to purchase the easements.

In 1993, Harford County also established its own Agricultural Preservation Program, which is recognized throughout the United States because of its use of innovative funding sources, payment options, and timely manner of settlement. To participate in the program a landowner does not have to form a district as required by the State program. There is also no minimum acreage requirement for participation as long as the farm has operated for the past ten years and/or is located in a predominately farming area and has development potential.

AGRICULTURAL PRESERVATION DISTRICT

An Agricultural Preservation District is established for a minimum of 5 years. To participate in the program, a farm owner must petition the State to establish an Agricultural Preservation District, and the farm must meet certain Criteria to be accepted as a District. The farm must contain 50% of USDA Soil Capability Groups I, II or III, or Woodland Groups I and II. The minimum required acreage is 100 acres; however, one or more land owners may combine their acreage to meet the Criteria. The District petition must be approved by the Harford County Agricultural Advisory Board, the Department of Planning and Zoning, and subsequently by the State for inclusion as a District. Residential, industrial, or commercial development is prohibited in an established Preservation District, but lots are permitted for a landowner or his children. Harford County currently has almost 100 Agricultural Preservation Districts, totaling over 28,000 acres.

DEVELOPMENT RIGHTS EASEMENT SALE

Once an Agricultural Preservation District has been established, the owner is eligible to petition for the sale of a development rights easement on the property. If an easement is sold, then the farm must remain in agricultural use in perpetuity. The use of easements depends on the ratio of the farm owner's asking price to the appraised farm values, and the availability of funds. The State Foundation handles all of the administrative and legal processes that are related to an easement sale. Harford County became a matching fund County in 1980. Since that time, money has been committed to the program by the County Council and County Executive. The number of farms selling easements has increased each year. Currently, between the State and County program there are 90 farms consisting of over 27,000 acres that have sold development easements in Harford County.

Since 1999, property owners in the Lower Deer Creek Valley have another option for land preservation through the Rural Legacy Program. The Lower Deer Creek Valley Rural Legacy Area was approved by the State in October of 1999, and currently there is \$2.75 million dollars available for the purchase of easements. One farm within the Critical Area has been designated as a priority for inclusion in the Rural Legacy Program.

Currently there is one farm in the Critical Area participating in the County's Agricultural Land Preservation Program and one other farm has accepted an offer for the State Program. Each of the programs provides a mechanism for the preservation of agricultural land in the Critical Area if a landowner in the Critical Area does decide to participate in the program.

REGULATION OF WATER POLLUTION CAUSED BY AGRICULTURE

The State Departments of Agriculture and Natural Resources and the Office of Environmental Programs (formerly of the Department of Health and Mental Hygiene, now of the Department of the Environment) have established procedures for addressing water pollution caused by agriculture. When an instance of a water quality problem is identified as a result of a citizen complaint or observance by State enforcement personnel, it is first referred to the local Soil Conservation District for a voluntary compliance approach. However, if one of the following conditions exists, formal enforcement action is taken instead:

- a point source discharge is involved which lacks an NPDES permit (i.e. a measurable, direct, surface-water discharge through a pipe, trench, or other structure; may be continuous or intermittent);
- agricultural chemicals, crop by-products or wastes have been dumped or placed in surface waters; or
- a condition exists which, if not corrected immediately, will result in locally significant or "catastrophic" pollution (includes, but not limited to, failure of structures).

Under the voluntary compliance approach, contact is made by the local Soil Conservation District with the owner/operator of the property in question to identify the best management practices that will eliminate or greatly reduce the problem and make plans for their installation. If the owner/operator does not agree to the installation of the BMP's, then he or she is formally notified by letter that he or she is in violation of State water quality standards and that remedial action is necessary. If the owner/operator still does not take remedial action, then legal enforcement action will be taken (a more detailed discussion of this enforcement procedure is contained in Appendix K).

CONSERVATION PROVISIONS OF THE FOOD SECURITY ACT OF 1985 (THE 1985 FEDERAL FARM BILL)

Several revisions of the 1985 farm bill are pertinent with respect to the objectives of the Critical Area Criteria concerning agricultural activities. These new provisions encourage the reduction of soil erosion and the retention of wetlands, and will reduce production of surplus commodities. The provisions are known as the Conservation Reserve, Conservation Compliance, Sodbuster, and Swampbuster programs.

CONSERVATION RESERVE

The Conservation Reserve offers producers help in retiring highly erodible cropland. The Agricultural Stabilization and Conservation Service (ASCS) will share up to half of the cost of establishing permanent grasses, legumes, tree, windbreaks, or wildlife plantings on highly erodible cropland. Under 10-year contracts, ASCS will make annual rental payments to the farmer as long as the terms and conditions of the contract are met.

CONSERVATION COMPLIANCE

Conservation compliance applies if a farmer continues planting annually tilled crops on highly erodible fields. To remain eligible for certain USDA program benefits, a farmer must develop and be actively applying a locally approved conservation plan for those highly erodible fields by January 1, 1990. The plan must be fully implemented by January 1, 1995.

SODBUSTER

Sodbuster applies if a farmer plants annually tilled crops on a highly erodible field that was not used for crop production during the period 1981-85. If he plows such a highly erodible field, he must do so under a conservation system approved by the local conservation district in order to remain eligible for USDA program benefits.

SWAMPBUSTER

Swampbuster applies if a farmer converts naturally occurring wetlands to cropland after December 23, 1985 (the date the farm bill was signed). With some exceptions, to remain eligible for certain USDA farm programs, a farmer must discontinue production of annually tilled crops on newly

converted wetlands.

If a farmer does not comply with the above provisions, he will become ineligible for assistance from the federal government through any of the following programs:

- * Price and income supports
- * Crop insurance
- * Farmers Home Administration loans
- * Commodity Credit Corporation storage payments
- * Farm storage facility loans
- * Conservation Reserve Program annual payments
- * Other programs under which USDA makes commodity-related payments.

IV. MODIFICATIONS MADE TO LOCAL REGULATIONS AND PROGRAMS

To comply with the provisions of the Criteria pertaining to agricultural activities the County has established an Agricultural Protection Plan with the following components:

- A Protection Component that consists of changing the limit on the density of development on agricultural lands for one unit per ten acres, to one unit per twenty acres through their designation as RCA in the Critical Area Overlay District. Any changes that may be made on the density of a development allowed on agricultural land located in coastal areas outside the Critical Area will result from the review currently being undertaken of the County's regulations relating to agricultural activities county-wide.

Owners of agricultural land in the Critical Area will be made aware of the opportunity they have for placing their land in an Agricultural Preservation District and for selling a development rights easement on their property.

- A mitigation component whose objective is to insure that the impacts of agricultural activities on water quality and Habitat Protection Areas are minimized. The major mechanisms used to achieve this objective have been the development of Soil and Water Conservation Plans for agricultural lands in the Critical Area and the implementation of Best Management Practices (BMP's) recommended in such plans with state and federal cost-share funding. Such plans will be reviewed by the Harford County Department of Planning and Zoning for consistency with the County's Critical Area Program. In addition, a fact sheet will be developed by the Department of Planning and Zoning specifying the provisions of the Criteria relating to agricultural activities. This fact sheet will be attached as part of the Plan, thus ensuring that owner/operators of agricultural lands are aware of such provisions and will as a result conduct their activities in a manner consistent with the Criteria. Appendix K contains a copy of a draft Memorandum of Agreement between the Harford County Soil Conservation District and the Department of Planning and Zoning detailing the role each will play in the development and implementation of Soil and Water Conservation Plans in the Critical Area. All agricultural lands in the Critical Area of Harford County have Soil and

Water Conservation Plans established with the Soil Conservation Service.

Language has also been included in the Ordinance creating the Critical Area Overlay District:

- requiring Soil and Water Conservation Plans for agricultural lands in the Critical Area;
- ensuring the protection of Habitat Protection Areas within agricultural lands;
- requiring Forest Management Plans for timber harvesting on agricultural lands;
- ensuring that new agricultural land is not created by:
 - 1) diking, draining, or filling of nontidal wetlands;
 - 2) clearing on slopes greater than 15% or on highly erodible soils;
 - 3) the clearing of land that will adversely affect water quality or will destroy plant and wildlife habitat located in Habitat Protection Areas; and
 - 4) the clearing of existing natural vegetation within the Critical Area Buffer.





CHAPTER 7

SURFACE MINING

I. REQUIREMENTS OF THE CRITICAL AREA CRITERIA

The Criteria define surface mining as: activities and uses that require breaking of the land surface to extract minerals, the processing of minerals, the extraction of sand, gravel, rock, etc., from borrow pits for highway construction purposes or other public facilities; and the removal of overburden for prospecting or exploration purposes and mining operations affecting one acre or greater.

The requirements of the Criteria are two-fold:

- To identify existing and suitable future sites for surface mining and to determine appropriate post-excavation uses for such sites; and
- To minimize pollutant runoff from surface mining sites and to ensure that surface mining does not occur in unsuitable areas, including the following:
 - 1) areas where important natural resources such as threatened and endangered species, areas of scientific value or rare assemblages of species occur such as those defined as Habitat Protection Areas;
 - 2) areas where highly erodible soils occur;
 - 3) areas where the use of renewable resource lands would result in the substantial loss of long-range (25 years or more) productivity of forest and agriculture or would result in the degradation of water quality or a loss of vital habitat; and
 - 4) areas within 100 feet of tidal waters or the edge of streams.

In addition, existing sand and gravel operations are to provide "to the fullest extent possible" a minimum 100-foot Critical Area Buffer between excavation activities and tidal waters, tidal wetlands or the edges of streams, and existing work ponds are to be reclaimed as soon as possible after the cessation of sand and gravel extraction operations. The Criteria also require that future wash plants, including ponds, spoil piles and equipment not be located in the Buffer.

II. SIGNIFICANT ISSUES AND FACTORS

The major issues associated with surface mining in the Critical Area are:

- identification of existing and suitable future sites in the Critical Area and suitable reclamation uses for such sites; and
- minimization of the adverse impacts of surface mining including pollutant loadings off-site and prohibiting the location of surface mining activities in unsuitable areas.

IDENTIFICATION OF EXISTING AND SUITABLE FUTURE SURFACE MINING SITES IN THE CRITICAL AREA

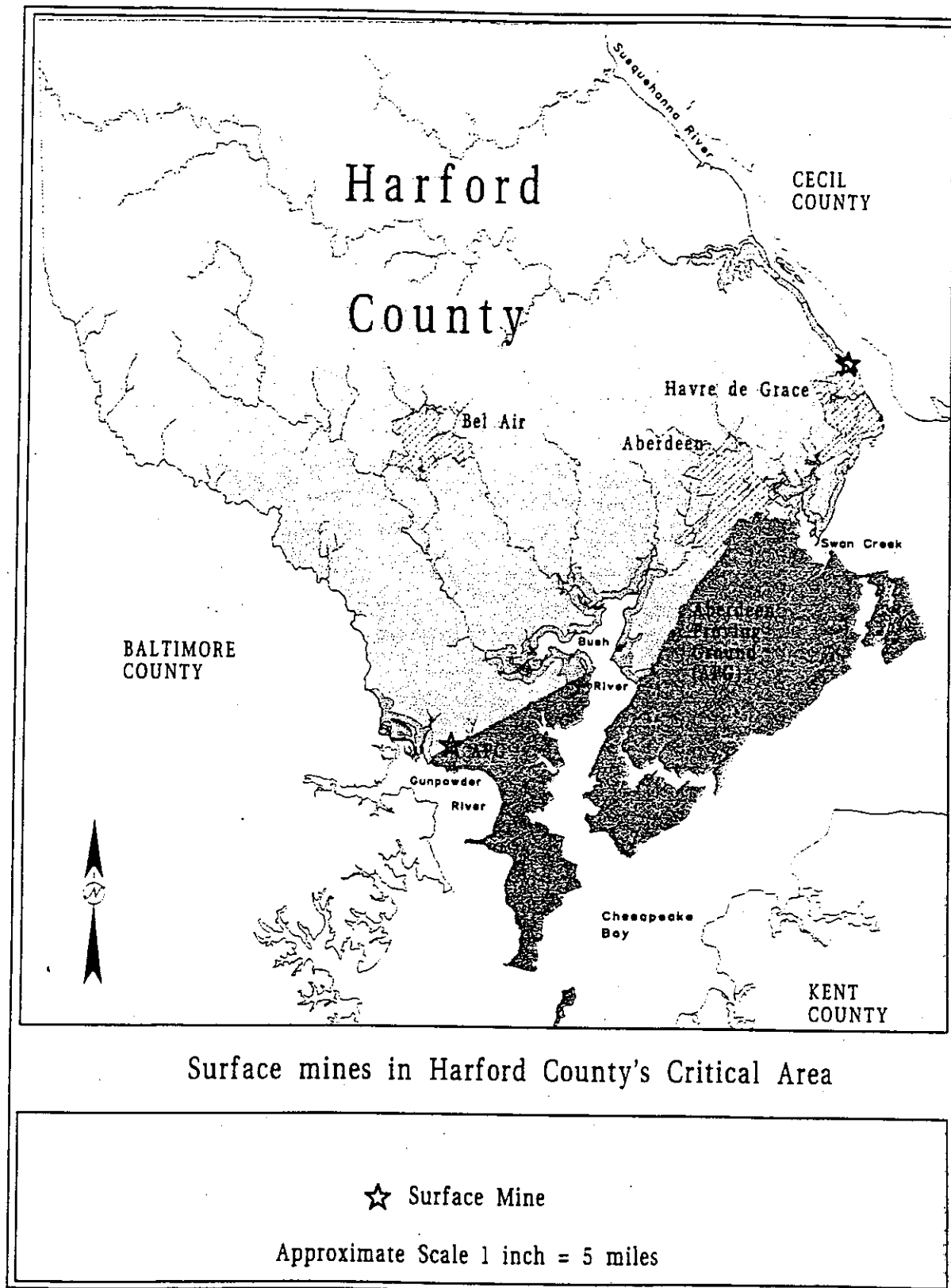
There are presently two active surface mining operations in the Critical Area, the Arundel Corporation site along the Susquehanna River north of Havre de Grace and the Harford Sand and Gravel operation near the Edgewood Arsenal. The former is a 182-acre operation located on a 300-acre parcel of land, 100 acres of which is in the Critical Area. The latter is a 66-acre operation located on a 78-acre site, 24 acres of which are located in the Critical Area. Both of these operations have State Surface Mining Permits that require them to minimize their impacts on water quality and plant and wildlife habitat and to develop reclamation plans. These mines are shown on Figure 8. There was a third operation, the Joppa Sand and Gravel operation along the Gunpowder River, which was illegally used as a hazardous waste dumping site. This site has been acquired by the State of Maryland, which is presently reclaiming the site for its eventual use as a park area.

With regard to potential future sites, the Maryland Geological Survey has completed a mapping effort to identify lands for potential mineral resource development in Harford County. This effort showed that potentially suitable sites in Harford County's Critical Area have already been used and depleted or have been preempted by existing and planned development. Thus, future surface mining operations in Harford County's Critical Area will be confined to expansion of the two existing operations at their present sites.

MINIMIZATION OF THE ADVERSE IMPACTS OF SURFACE MINING OPERATIONS

Table 7-1 lists the potential pollutants that may be generated by sand and gravel operations and treatments that may be applied to them. As discussed in the next section, the State Surface Mining Permit program provides for the minimization of the adverse environmental impacts of sand and gravel operations and ensures the reclamation of their sites. Since there are no suitable areas in Harford County's Critical Area from a resource base perspective, there is no likelihood that new surface mining operations will be located in areas inappropriate for such uses.

FIGURE 8



III. EXISTING REGULATORY AND MANAGEMENT PROGRAMS

STATE SURFACE MINING PERMIT PROGRAM

In 1975, the State of Maryland established a surface mining permit program, administered by the Maryland Department of Natural Resources to ensure that the adverse impacts of such operations are minimized and that appropriate reclamation measures are undertaken once the mineral resource being mined is depleted. Permits for surface mining operations will not be granted if:

- Operation will have unduly adverse effects on wildlife, or fisheries;
- Operator failed to provide applicable permits from State and local regulatory agencies responsible for air and water pollution and sediment control;
- Operation will constitute a substantial physical hazard to a neighboring house, school, church, hospital, commercial or industrial building, public road, or other public or private property existing at the time of application for the permit;
- Operation will have a significantly adverse effect on the use of publicly owned park, forest, or recreation areas existing at the time of application for the permit;
- Operator does not possess a valid surface mine operator's license or is the subject of legal action brought against him by the Department of Natural Resources;
- Effects of the proposed action on the environment have been inadequately considered; and
- Previous experience with similar operations indicates a significant probability that the operation will result in substantial deposits of sediment in stream beds or lakes, landslides, or will cause other water pollution.

A reclamation plan must be submitted as part of a surface mining permit application that specifies the use that is proposed to be made of the site following reclamation, the manner in which topsoil and subsoil are to be conserved and restored, the specifications for surface gradient restoration suitable for the subsequent use, the proposed manner and type of revegetation or other surface treatment of affected areas, and a true schedule for the implementation of reclamation measures. Reclamation is to occur as mining on each segment of a site is completed. A bond is required in order to ensure that appropriate reclamation occurs.

TABLE 7-1
POTENTIAL POLLUTANTS FROM
SAND AND GRAVEL OPERATIONS
AND APPROPRIATE REMEDIAL MEASURES

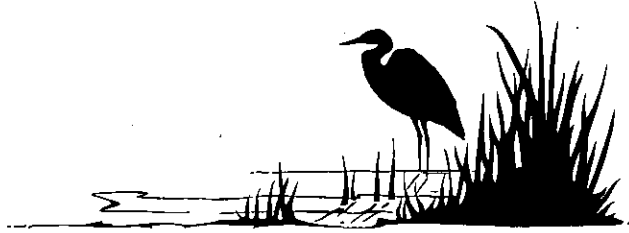
Sources: Md-National Capital Parks and Planning Commission (6/83), U.S. Department of Interior (9/78)

<u>POLLUTANT</u>	<u>IMPACT</u>	<u>SOURCE/CAUSE</u>	<u>TREATMENT/REMEDY</u>
Airborne dust and particulates	Sedimentation & coverage of plants, wildlife & land, Increased exposure to humans Increased levels of respirable dust Changes in local soil & climate	Trucks travel over unpaved roads. Wind erosion from exposed soil. Excavation operations: rock crushing & pulverizing accumulation of overburden	Improved haul roads. Prompt reclamation and revegetation. Use dust control measures Apply air quality standards.
Noise	Interference with animal life cycles Noise disturbing residential areas Vibration disturbance of property	Truck traffic, earth moving Excavation, blasting, pulverizing	Control noise in sensitive seasons Sustained road grades of 7-9% Use preblast surveys & buffers Improve orientation of site operations to residential areas.
Surface Water	Water quality & quantity impacts: Sedimentation, Channel erosion Reduced stream & base flow Increased ponding & flooding Product discharges, Rill/inter-rill erosion Iron leachate & heavy metals contamination Increased N & P loadings	Altered infiltration rates. Increased runoff. Stream encroachment Altered drainage density Contamination of runoff w/ oils, fuels, & wash products Excessive overburden & spoil accumulation.	Add runoff treatment facilities Stabilize potential erosion areas, as possible.. Control & monitor nature & extent of burden & spoils removed
Groundwater	Reduction of water in local wells or in some types of aquifers Impacts to local wetlands Pollution of groundwater & aquifer flow disruption	Disrupted/diverted waterflow to local aquifers Blasting can fracture rock strata & create fissures that redirects groundwaters.	Maintain site's recharge capacity Declare specific areas of site unsuitable for mining.
Land Clearing	Altering/loss of original soils, drainage pattern, vegetation, landforms & habitats is usually permanent following surface mining	Mining activities grossly disturb the earth surface.	Plan & phase burden stockpiles Use reclamation BMPs: Reshape the reclaimed surfaces, Orient spoil to maximize recharge, Analyze overburden for possible use as backfill, Protect fills from failure, Remove operation roads, Declare certain areas of site unsuitable for mining.

IV. MODIFICATIONS MADE TO LOCAL REGULATIONS AND PROGRAMS

The Critical Area Ordinance prohibits the establishment of new surface mining operations within the Critical Area. Since no new surface mining operations are likely in Harford County's Critical Area, all that is necessary is the monitoring of existing operations and a review of proposed expansions of such operations by the Department of Planning and Zoning to ensure that off-site pollutant loadings are minimized and that significant plant and wildlife habitat are not adversely affected. The State Surface Mining Permit Program is considered to be the main regulation mechanism, complemented with provisions in the Critical Area Overlay District requiring a Special Exception approval for any proposed expansions. Conditions of approval of such Special Exceptions would be measures to ensure the protection of any Habitat Protection Areas (including the Critical Area Buffer) on or adjacent to the site, minimization of off-site pollution loading through implementation of measures such as those listed in Table 8 and development of adequate reclamation plans.





CHAPTER 8

NATURAL PARKS

I. REQUIREMENTS OF THE CRITICAL AREA CRITERIA

One of the primary objectives of the Criteria is to encourage the opportunities for interaction between natural environments and people without adversely impacting the natural habitat values of these areas. The Criteria call for the use of "natural parks" as a means of meeting this objective. Natural parks are defined in the Program Development Criteria as "Areas of natural habitat that provide opportunities for those recreational activities that are compatible with the maintenance of natural conditions." To meet the Criteria requirements for natural parks, local jurisdictions are to:

- Identify areas where natural parks could be established and consider the use of measures such as land acquisition, easement designations or protective designations to protect these areas. Park areas should be chosen to preserve important examples of coastal ecosystems found within the jurisdiction with boundaries based on biological needs for adequate conservation of these areas; and
- Any plans developed for the use of these parks should primarily emphasize resource protection measures and should limit park uses, including the number of visitors, as needed, in order to reduce disturbance of the ecosystems.

II. SIGNIFICANT ISSUES AND FACTORS

With regard to natural parks, the following significant issues need to be dealt with by the County in order to meet the intent of the Criteria:

- Identification of potential sites for the establishment of natural parks within Harford County's Critical Area; and
- Identification of the means by which these sites will be protected and managed in order to preserve the unique ecosystems that may be found in them.

IDENTIFICATION OF POTENTIAL SITES FOR NATURAL PARKS

In terms of the first issue, Harford County's Critical Area contains a number of sites that are potential candidates for natural parks. The establishment of these natural park areas will also serve to enhance public opportunities for waterfront access and passive recreation compatible with the natural parks

concept as outlined in the Criteria. Some of these sites are already owned by the County, while others are in private or State ownership. The locations of existing parks and State-owned natural resource areas are shown on Figures 9 and 10. Table 8-1 gives a brief description of these various areas with their locations being shown on the accompanying map.

APPROPRIATE MANAGEMENT OF NATURAL PARK AREAS

Sites identified as having potential for natural parks use can be protected and managed in a variety of ways. Historically, the primary means of protecting such areas has involved direct acquisition and management by a public entity. Many of the potential natural park sites in the County have been acquired and will be managed in this manner (e.g., Leight and Mariner Point Parks). The State has also been involved in helping to preserve natural areas through a land acquisition program in the Bush River Declaration Natural Resources Management Area. However, it should be noted that there has been some recent interest in having the County assume ownership and management responsibilities for this area. Funds for the development of limited park facilities in these areas have been available from State and federal grant awards in the past, and the County will continue to pursue the funding opportunities that are available in the future.

In addition to outright purchase, natural park areas can also be obtained through a variety of other means such as cooperative use agreements, the purchase of conservation easements, etc. The Otter Point Creek Marsh Area is one example where such programs have worked successfully in Harford County, particularly with the establishment of the National Estuarine Research Reserve Area through the cooperative use of lands owned by private conservation groups in this area. As other potential natural park sites in Harford County are examined further, the use of these alternatives to direct acquisition should be considered wherever feasible. Plans for development in and use of areas designated as natural parks will be reviewed for consistency with the objectives of the County's Critical Area Program.

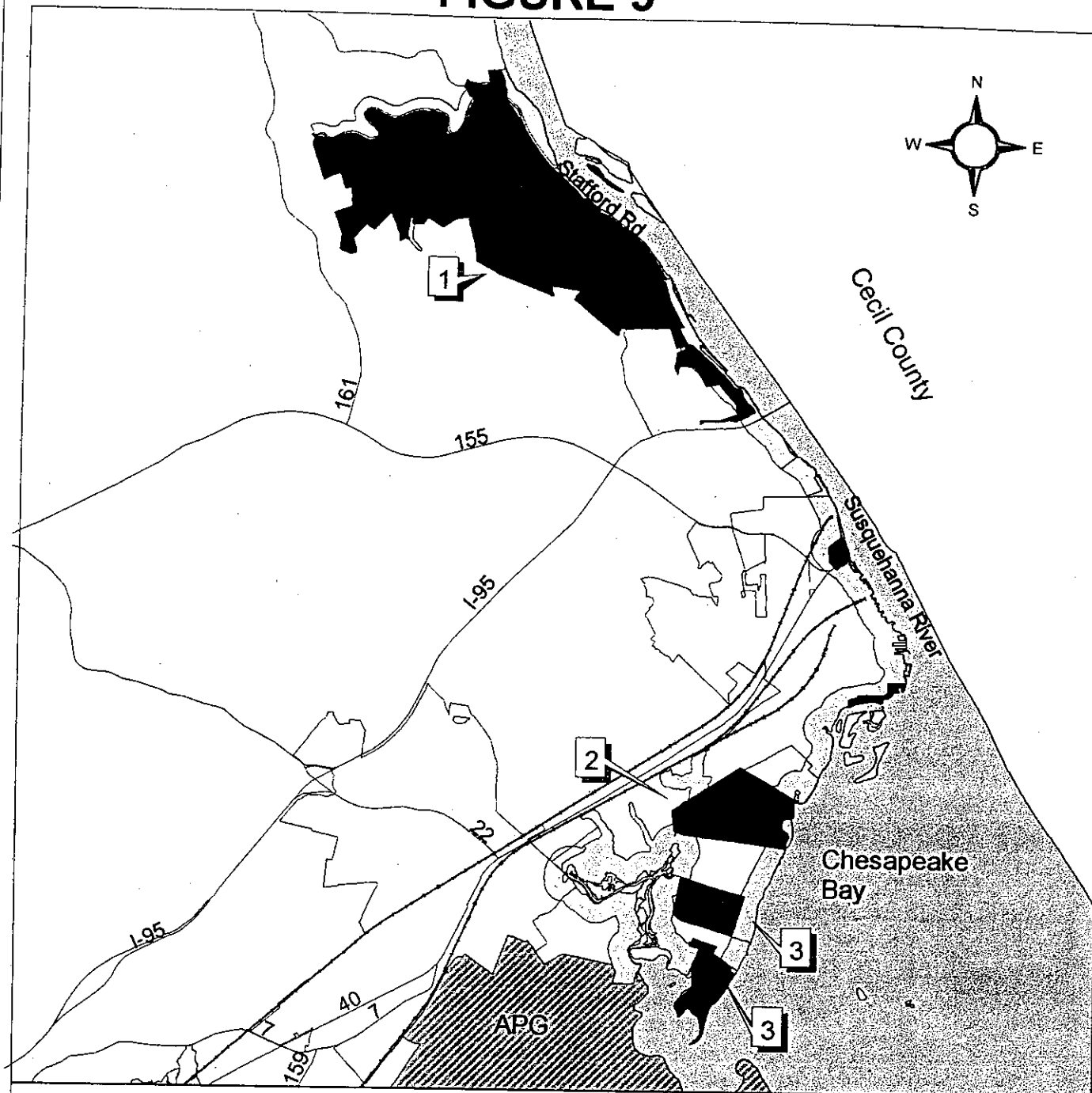
III. EXISTING REGULATORY AND MANAGEMENT PROGRAMS

NATIONAL ESTUARINE RESEARCH RESERVE

The National Estuarine Research Reserve Program is a cooperative Federal-State program established under the provisions of the Federal Coastal Zone Management Act for the purpose of preserving representative estuarine areas for long-term research and educational activities. The federal government is responsible for overall management of the nationwide reserve systems with the State being responsible for the selection of appropriate sites and the development of management programs for them. Grants are available from the federal government for acquisition of appropriate sites, management of related sites or the undertaking of appropriate research activities.

FIGURE 9

01-36



Parks and other dedicated natural areas in the Susquehanna River and Swan Creek portions of the Critical Area

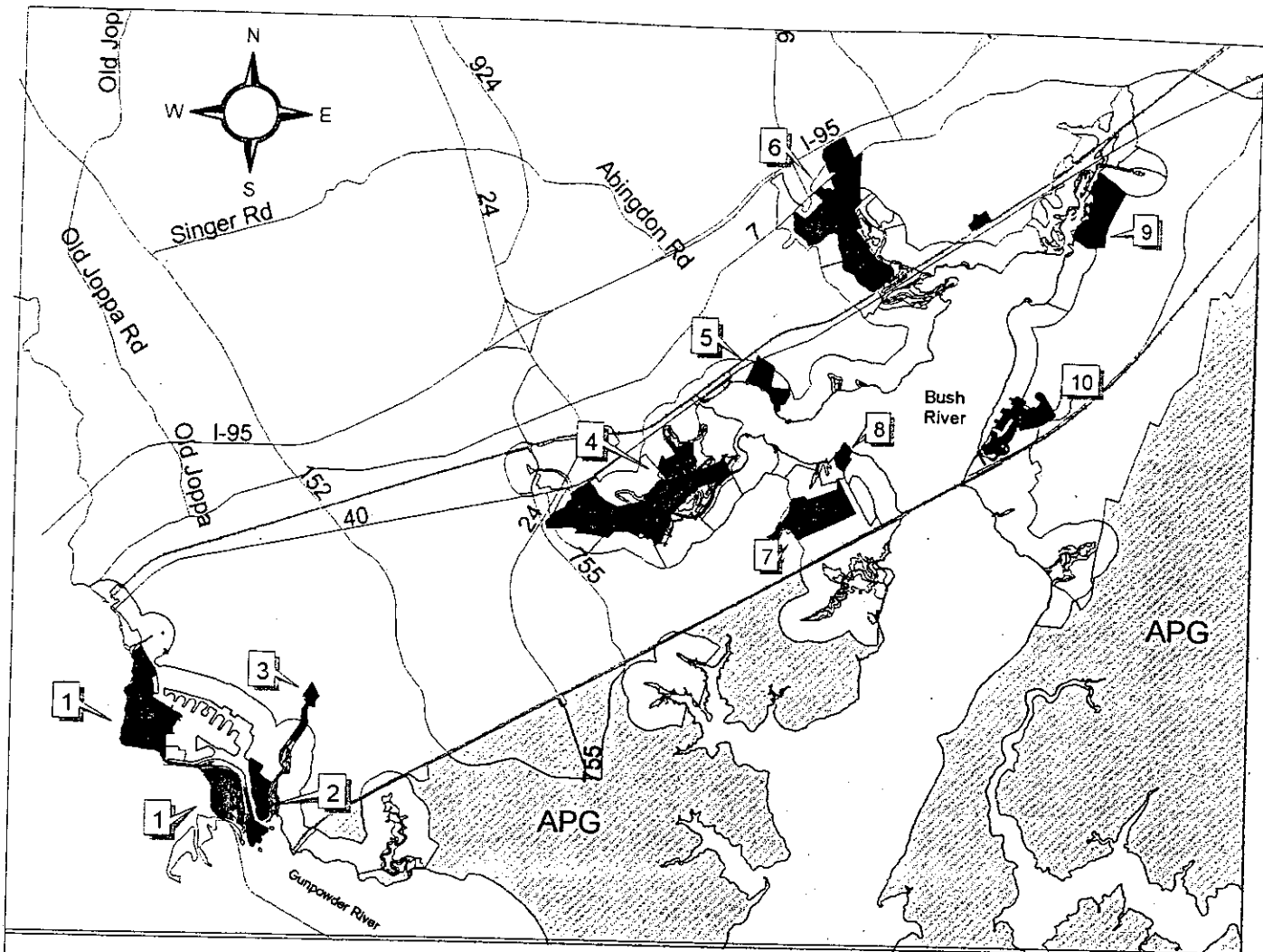
- 1** Susquehanna State Park
- 2** Swan Harbor Farm Park
- 3** Oakington-Tydings

1.5 0 1.5 3 Miles

01-36

FIGURE 10

01-36



Parks and other dedicated natural areas in the Gunpowder and Bush River portions of the Critical Area

- | | |
|------------------------------|-------------------------|
| 1 Gunpowder Falls State Park | 6 Bush Declaration Area |
| 2 Mariner Point Park | 7 Willoughby Woods |
| 3 Robert Coppenhaver Park | 8 Flying Point Park |
| 4 Otter Point Creek NERR | 9 Perryman Park |
| 5 Leight Estuary Center | 10 Forest Greens Lake |

1.5 0 1.5 3 Miles

01-36

TABLE 8-1
POTENTIAL SITES FOR ESTABLISHMENT OF NATURAL PARKS

County Ownership			
<u>NAME</u>	<u>Approximate Size</u>	<u>Unique Features</u>	<u>Comments</u>
Mariner Point Park	38 acres	Peninsula surrounded by Foster Branch Creek, Taylors Creek and the Gunpowder River. 5000 feet of shoreline; mix of mature woodland and woody scrub.	Pathways, observation deck, fishing pier, boat launch, parking and picnic shelter.
Leight Park	61 acres	Heavily wooded site containing significant stands of mature hardwoods; provides excellent waterfront vistas of Otter Point Creek. Contains several small tidal marshes.	Being developed as an educational center and passive open space park. Improvements include a visitors center, a small boat/canoe launch limited to car-top size boats, a nature trail, & 25 vehicle limited parking area.
Perryman Park	87.9 acres	Overlooks Bush Creek Marsh. Predominantly open area with some woodlands and wetlands.	Being developed as a park with a nature trail, restrooms, parking, ballfields, maintenance and storage facility.
Robert Coppenhaver Park	24 acres	Borders Foster Branch Creek. Predominantly forested with some nontidal wetlands. non-tidal wetlands. Recreational use in natural park setting.	Northeastern portion used for active recreation; remainder has potential for passive recreation.
Swan Harbor Farm	± 469.4 acres	Habitat of Local Significance and of threatened and endangered species. Site includes prime agricultural land, historical, and archeological resources.	Historic home used for events. Future plans include trails for pedestrian access to the waterfront and a pond for enhancement of waterfowl and shorebird habitat. The balance of the site is farmed.
Oakington-Tydings	+315.64 Acres	Site with 4300 feet of frontage on the Chesapeake Bay and 5000 feet of frontage along Swan Creek. Site includes prime farmland and historic barns.	Site is currently farmed.
Forest Greens Lake	110.57 Acres	Site includes shallow lake and marsh area with fish and wildlife habitat.	Site is used for passive recreation such as fishing and trails.
State Ownership			
Bush River Declaration Area	500 acres	Marsh and low-lying, woody fresh water/estuarine marsh area. Several heavily wooded areas.	Lands purchased by the State to protect natural features.

Table 8-1, continued

<u>Name</u>	<u>Approximate Size</u>	<u>Unique Features</u>	<u>Comments</u>
Susquehanna State Park	± 2650 acres	Boat launch, picnic areas, Deer Creek, fishing, trails, campground, historic features, Habitats of Local Significance.	Greenway trail proposed along the Susquehanna shoreline.
Private Ownership			
Swan Creek Marsh	± 50 acres	Contains diverse habitat areas.	----
James Run/Bush Creek Marsh Area	± 70 acres	Large mud flat areas; lower level of ecological diversity.	Could possibly link with Bush River Declaration Area for a natural park.
Church Creek Marsh	70 acres	Contains marsh and low-lying wooded areas; very diverse ecosystem with large wildlife habitat areas.	Adjacent to developed area, Riverside. Transfer of ownership to County under consideration.
Otter Point Creek	± 500 acres	Diverse marsh ecosystem area; large area provides good wildlife habitat.	Area within Estuarine Research Reserve Program. Owned by Izaak Walter League
Willoughby Woods	± 50 acres	Habitat of Local Significance Dense woods with vernal pools and other associated wetlands.	Owned by Harford Land Trust with potential for County-run nature programs.

The State of Maryland has established a multi-site Chesapeake Bay National Estuarine Research Reserve Program in conjunction with the State of Virginia that can be used for research and education of natural estuarine processes and man-induced stresses on the Bay. The 445-acre Otter Point Creek Marsh complex located near the head of Bush Creek Marsh complex located near the head of Bush Creek has been selected one of the sites included in the Program. The property involved is owned by a private conservation organization, the Isaak Walton League, which has utilized the site for environmental education field trips and the activities in cooperation with the Reserve Program. The Izaak Walton League has supported inclusion of the area into the Reserve Program as has Harford County. The large size of the marshes, in conjunction with the site's proximity to urban areas and general location in the Bay, makes the area excellent for conducting research of importance to Bay managers and educational projects. Inclusion of the area into the Reserve Program is compatible with and supportive of its use as a natural park area.

COUNTY ACQUISITION AND PROGRAMS FOR RECREATION AND OPEN SPACE AREAS

As noted previously, through the combined efforts of the Department of Parks & Recreation and Planning & Zoning, Harford County has been attempting to acquire and develop several areas along the shore that are consistent with the natural parks concept. In several instances (Leight and Mariner Point Park) funding for limited development of those sites is being provided through Federal Coastal Zone Management Grant Programs administered by the Department of Natural Resources. Development plans for these sites include nature trails, bay observation areas, canoe launch facilities and limited parking and other associated site improvements. All of the improvements are being made with the primary emphasis being on the fragility of the natural areas involved and their limited ability to handle traditional recreational use impacts.

Along the Oakington peninsula, the County has undertaken an aggressive waterfront acquisition program with the assistance of Program Open Space. Almost 800 acres of waterfront property has been purchased. The two properties that were acquired, Swan Harbor and Tydings, contain significant habitat areas and are consistent with areas to be established as natural parks. Plans for both of the areas will be developed consistent with the goals of the Critical Area Program.

IV. MODIFICATIONS MADE TO LOCAL REGULATIONS AND PROGRAMS

To be consistent with the provisions of the Criteria pertinent to Natural Parks, the County, through the Departments of Parks & Recreation, Planning and Zoning and other relevant agencies, examined the potential for the establishment of natural parks in those areas identified in this chapter. For ongoing projects programs involving acquisition, development and management need to be coordinated between all agencies involved. Those land areas that are currently in private ownership and are adjacent to public land holdings having natural park potential should receive priority consideration. Where appropriate and feasible, the County will continue to work with affected landowners and private conservation organizations to utilize alternatives to direct acquisition of additional natural park areas. The County will also coordinate with the Department of Natural Resources regarding the potential for County ownership and management of the Bush Declaration Natural Resources Management Area. Any plans for natural park use/development shall be made with primary concern for fragility of ecosystems and the habitat values of the areas.

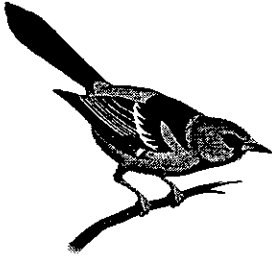
As noted previously, plans for the development and use of areas designated as natural parks will be developed by the County Departments of Parks and Recreation and Planning and Zoning, with input from appropriate State and local agencies, in accordance with the standards listed below in order to ensure their consistency with the County's Critical Area Program. Development and activity plans for such areas will be based on the fragile nature of the natural systems on these sites and their limited ability to handle human impacts. The standards that the County will utilize in the review of development and management plans for natural park areas are as follows:

- The Critical Area Buffer shall be maintained adjacent to tidal waters and tidal wetlands. If areas within this Buffer are presently unvegetated, trees or other suitable vegetation shall be planted as a part of site development;
- All identified nontidal wetlands and areas of importance for plant and wildlife habitat shall

be protected on the site;

- All areas presently forested on the site shall be maintained to the maximum extent feasible;
- All publicly owned lands leased for agricultural activities shall have current Soil and Water Conservation Plans;
- Public beaches or other public water-oriented recreation or education areas including, but not limited to, publicly owned boat launching and docking facilities and fishing piers that require a shorefront location, and thus must be located within the Critical Area Buffer, will be subject to the following requirements:
 - 1) Adequate sanitary facilities shall be provided;
 - 2) Service facilities shall be, to the extent possible, located outside the Buffer;
 - 3) Permeable surfaces shall be used to the extent practicable, if no degradation of groundwater would result; and
 - 4) Disturbance to natural vegetation shall be minimized; and
- The use of such areas for passive recreation activities such as nature study, hunting and trapping, and for environmental education will be allowed if non-water-dependent service facilities for such areas are located outside the Critical Area Buffer.





CHAPTER 9

HABITAT PROTECTION AREAS

This chapter has been divided into five parts that discuss the Critical Area Buffer, habitats of threatened and endangered species, Areas of significant plant and wildlife habitat value, anadromous fish propagation waters, and nontidal wetlands.

PART A CRITICAL AREA BUFFER

I. REQUIREMENTS OF THE CRITICAL AREA CRITERIA

Two of the main objectives of the Criteria are to minimize adverse impacts on water quality, and conserve plant, wildlife and fish habitat. To assist in achieving these objectives, the Criteria require that local jurisdictions establish a minimum 100-foot Buffer landward from tidal waters, tidal wetlands, and tributary streams. This Buffer area is expanded beyond 100 feet to include contiguous sensitive areas such as steep slopes, hydric soils or highly erodible soils whose development or disturbance may impact streams, wetlands, or other aquatic environments. In the case of contiguous slopes of 15% or greater, the Buffer is to be expanded 4 feet for every 1% of slope or to the top of the slope, whichever is greater in extent.

The purpose of establishing such a natural Buffer is so that it can serve the following functions:

- Provide for the removal or reduction of sediments, nutrients, and potentially harmful or toxic substances in runoff entering the Bay and its tributaries;
- Minimize the adverse effects of human activities on wetlands, shorelines, stream banks, tidal waters, and aquatic resources;
- Maintain an area of transitional habitat between aquatic and upland communities;
- Maintain the natural environment of streams; and
- Protect riparian wildlife habitat.

Natural buffer areas not only mitigate the adverse impacts on water quality from runoff from activities on adjacent upland areas, but also provide protection for the other types of Habitat Protection Areas discussed in this chapter. Within the Buffer, new development activities, including

structures, roads, parking areas and other impervious surfaces, mining and related facilities, or septic systems, are not allowed, except for those necessarily associated with water-dependent facilities. The Buffer is to be maintained in natural vegetation, but may include planted native vegetation where necessary to protect, stabilize, or enhance the shoreline.

As discussed in Chapters 5 and 6 respectively, forestry operations and agricultural activities are allowed in the Buffer under certain conditions, provided that they do not involve permanent removal of natural vegetation from the Buffer and they do not adversely affect the Buffer's ability to carry out the functions noted above. Any other removal of vegetation in the Buffer requires a Buffer Management Plan. The Department of Planning and Zoning must approve this plan. The Buffer Management Plan constitutes the official record of proposed Buffer clearing and the mitigation measures that will be provided. Appendix F describes the information required for a Buffer Management Plan. With an approved Buffer Management Plan, the cutting of trees or removal of natural vegetation is allowed in the Buffer where necessary to provide access to private piers, or to install or construct a shore erosion protection device or measure, or a water-dependent facility, providing the device, measure, or facility has received all necessary State and federal permits.

Individual trees may be cut for personal use providing that this cutting does not impair the water quality or existing habitat value or other functions of the Buffer, as noted above, provided that the trees are replaced on an equal basis for each tree cut. Individual trees may also be removed which are in danger of falling and causing damage to dwellings or other structures, or which are in danger of falling and therefore causing the blockage of streams, or resulting in accelerated shore erosion. Horticultural practices may be used in the Buffer to maintain the health of individual trees. Other cutting techniques may be undertaken within the Buffer under the advice and guidance of the Departments of Agriculture and Natural Resources, if necessary to preserve the forest from extensive pest or disease infestation or threat from fire.

BUFFER EXEMPT AREAS

Those areas as of December 1, 1985 where it can be demonstrated that the existing pattern of residential, commercial, industrial, or recreational development in the Critical Area prevents the Buffer from fulfilling the functions set forth in COMAR 27.01.09.01B for water quality and wildlife habitat, and which are mapped Buffer Exempt are exempt from the Critical Area Buffer provisions. However, development in these areas is addressed by a separate set of requirements for landscaping and restrictions to the cumulative amounts of new impervious surfaces. As specified in Section 267-41.1.G. (4) (A) of the Harford County Zoning Ordinance.

II. SIGNIFICANT ISSUES AND FACTORS

DETERMINATION OF AREAS TO BE INCLUDED IN THE BUFFER

Due to the necessity of locating the Buffer expansion features such as hydric soils in the field, the location of the Buffer must be identified and mapped on a site-specific basis at the time preliminary plans, Forestry Management Plans, or similar plans are developed for activities proposed in the

Critical Area. However, the area that would likely have to be included in the Buffer can be roughly determined by reference to the Buffer Elements Map that indicates the location of the tidal shorelines, and tributary streams, 100-foot Buffer, Buffer Exempt Areas, and the soils map showing the general location of hydric soil areas, soils with steep slopes and highly erodible soils. The Buffer must be expanded to include contiguous areas with slopes greater than 15%. It may also have to be expanded in areas of highly erodible soils unless it can be shown that the proposed activity will not adversely affect streams, wetlands, or other aquatic environments. As noted in the next section of this chapter, hydric soils are considered by definition nontidal wetlands and, thus, activities proposed on such soils would be regulated under the provisions of the County's regulations pertaining to nontidal wetlands.

One factor that is important in determining the location of Buffer Areas in the Critical Area is identifying the location of tributary streams. These were mapped on the Natural Features Maps by referring to the location of perennial and intermittent streams as shown on USGS 7" topographic maps and the Harford County Soils Survey. These were then checked by photo interpretation of 1986 aerial photography of Harford County's coastal areas. At the time when a development, forestry operation, etc., is proposed in the Critical Area, a site-specific survey should be conducted to verify the exact location of perennial and intermittent streams in Harford County's Critical Area and the 100-foot Buffer that will need to be maintained adjacent to them.

DEVELOPMENT OF MEASURES TO ENSURE PROTECTION OF THE BUFFER

In order to ensure that the Buffer is maintained in natural vegetation at the time a development is proposed, the location and extent of the Buffer is required to be shown on concept plans, preliminary plans and associated sediment control and stormwater management plans as areas to be kept in a natural condition. The limit of disturbance line shall also be shown on all plans. The limit of disturbance shall not encroach into the Buffer. Similarly, delineation of the location of the Buffer and appropriate measures to ensure its integrity is required as part of the development of Forest Management Plans for forest harvest operations in the Critical Area. In the case of agricultural activities, the provisions of the Criteria pertaining to maintenance of the Buffer are included as part of the Soil and Water Conservation Plan.

In addition, as noted previously, creation of a vegetative natural Buffer where one does not presently exist will be one of the main objectives of the County's Urban Forestry Program. (See Appendix F.) In the case of new development where the Buffer is not entirely established in woody vegetation, and open space within 100 feet of tidal waters is available, the Buffer shall be planted in native trees and shrubs.

III. EXISTING LOCAL REGULATORY AND MANAGEMENT PROGRAMS

Protection of areas adjacent to streams and tidal waters is indirectly provided by the County's Floodplain Ordinance that generally prohibits development in the 100-year floodplain.

IV. RECENT MODIFICATIONS MADE TO LOCAL REGULATIONS AND MANAGEMENT PROGRAMS

As noted in previous chapters, a Chesapeake Bay Critical Areas Overlay District that replaces the provisions of the Natural Resources District for the shoreline area is the major mechanism for implementing the requirements of the Criteria. Included in the provisions of the Overlay District are language ensuring protection of the Buffer and the provisions for the Buffer Exempt Areas.

As discussed in Chapter 2, revisions to the Subdivision Ordinance were made to ensure that the location of the Buffer is noted on concept plans, preliminary plans, and final plats and that appropriate measures are instituted to ensure its protection.

PART B THREATENED AND ENDANGERED SPECIES AND SPECIES IN NEED OF CONSERVATION

I. REQUIREMENTS OF THE CRITICAL AREA CRITERIA

The Criteria require that particular attention be given to ensuring protection of species designated by the State as Threatened and Endangered Species or Species in Need of Conservation and their habitats. Such species are defined as follows:

- An "Endangered Species" is any species whose continued existence as a viable component of the State's flora or fauna is determined to be in jeopardy including any species determined to be an "Endangered Species" pursuant to the federal Endangered Species Act.
- A "Threatened Species" is any species of flora or fauna that appears likely, within the foreseeable future, to become endangered including any species determined to be a "Threatened Species" pursuant to the federal Endangered Species Act.
- A "Species in Need of Conservation" is any species determined by the Secretary of the Department of Natural Resources to be in need of conservation measures for its continued ability to sustain itself successfully.

Species in each of these categories are formally designated by regulation by the Secretary of the Department of Natural Resources. The Criteria require local governments to develop protection programs for such species with the assistance of the Maryland Department Of Natural Resources, and other appropriate public agencies and private organizations. Such programs are to consist of one or both of the following elements:

- Designation of a protection area around each of the habitats occurring in the jurisdiction within which development activities and other disturbances shall be prohibited unless it can be shown that these activities or disturbances will not have or cause adverse impacts on these habitats.

- Development of programs for providing protection for the habitats of Species in Need of Conservation and Endangered, and Threatened species that may include, but are not limited to, acquisition, conservation easements, cooperative agreements with landowners, special provisions in forest management and soil conservation plans, and special provisions in subdivision or zoning regulations.

II. SIGNIFICANT ISSUES AND FACTORS

The issues concerning Threatened and Endangered Species and Species in Need of Conservation are two-fold: to identify the location of the habitats of such species; and to develop appropriate protection programs for such habitats.

IDENTIFICATION OF THE LOCATION OF THE HABITATS OF THREATENED AND ENDANGERED SPECIES AND SPECIES IN NEED OF CONSERVATION IN HARFORD COUNTY'S CRITICAL AREA

Species that have been designated as State Threatened and Endangered Species and Species in Need of Conservation are listed in Appendix M. Habitats of such species have been found in various locations in Harford County's Critical Area including nontidal wetland areas along the Susquehanna River that provide habitat for a rare reptile in need of conservation, and Deer Creek and Gasheys Creek and their tributaries that are habitat for the Maryland Darter (which is both a State and federally Endangered Species), and along a steep slope area on the south bank of Deer Creek. This is a habitat area for a threatened plant species. Habitat areas of threatened and endangered plant species have been identified on the shores of the Gunpowder River, Grays Run, Church Creek and the Bush River along the Perryman peninsula, and in Church Creek Pond. All identified habitats of threatened and endangered species and species in need of conservation are also designated habitats of local concern. The location of such habitat areas and buffer areas required to ensure protection of the species contained in such habitats have been mapped on the Habitats of Local Significance Maps. They are described in more detail in Appendix M. The locations of the protection areas for these habitats are shown on Figures 11 and 12.

To provide protection for such habitat areas, the County, with the assistance of pertinent State agencies, will attempt to develop cooperative management programs with the landowners of the properties containing such areas. Such programs may involve the establishment of conservation easements on such habitat areas and their required buffer areas. In addition, any activities that may be proposed in or adjacent to such areas will be reviewed through the development review process as described in Chapter 2 or as part of the development of any required Forest Management Plan or Soil & Water Conservation Plans.

FIGURE 11

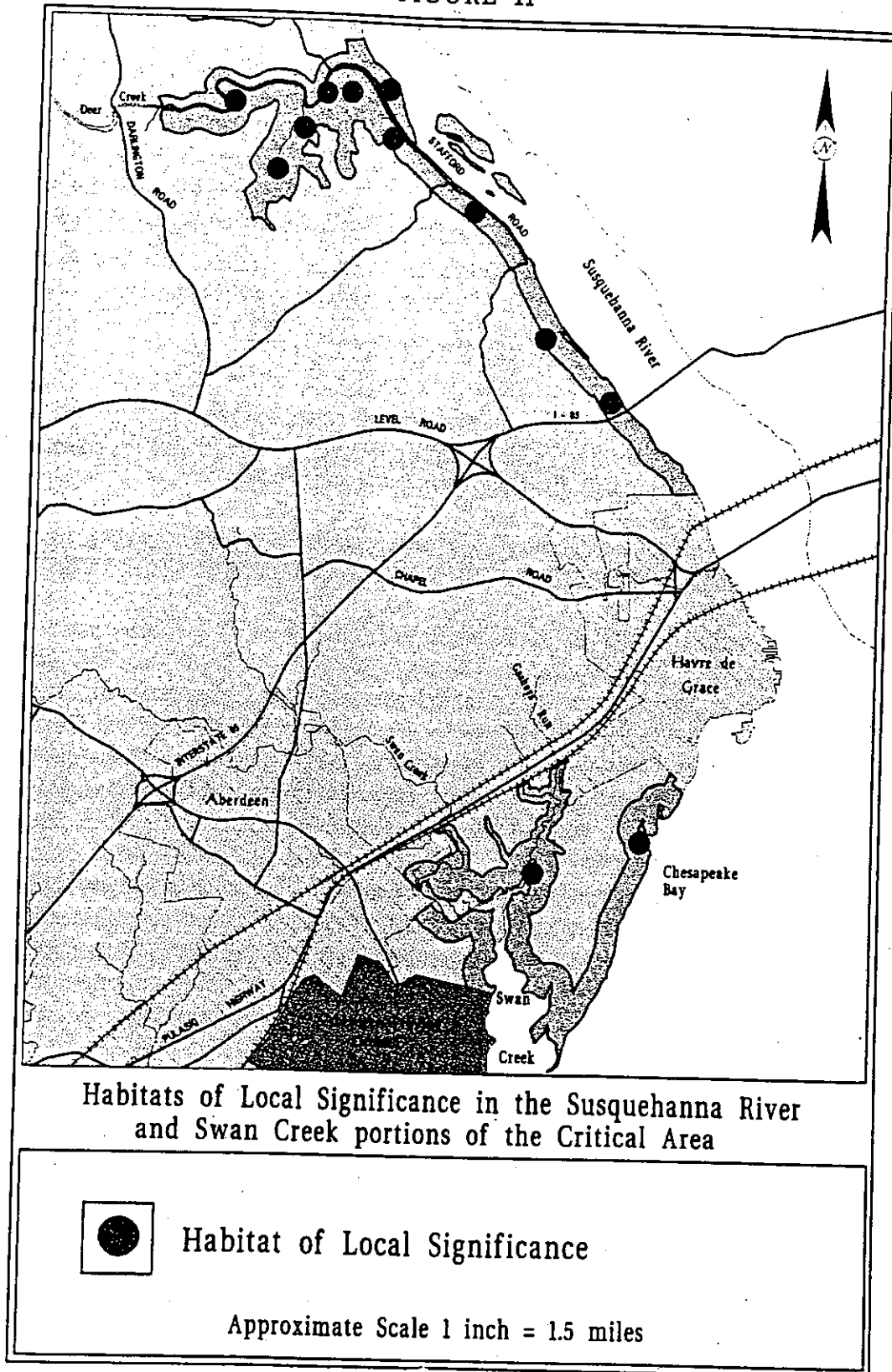
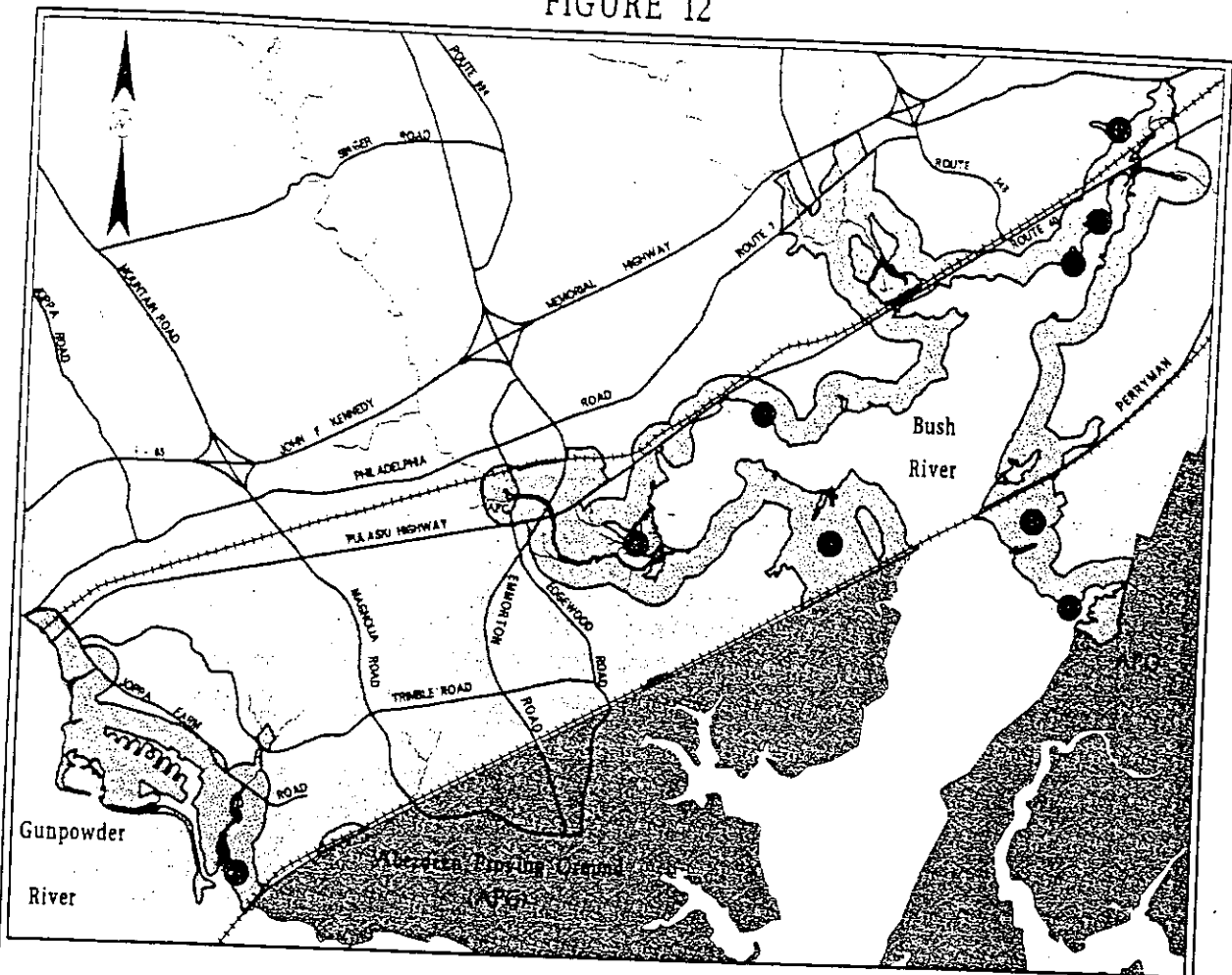


FIGURE 12



Habitats of Local Significance in the Gunpowder River
and Bush River portions of the Critical Area



Habitat of Local Significance

Approximate Scale 1 inch = 1.5 miles

III. EXISTING PERTINENT FEDERAL, STATE AND LOCAL REGULATORY/ MANAGEMENT PROGRAMS

FEDERAL MARYLAND DARTER RECOVERY PLAN

The U.S. Fish & Wildlife Service has developed an Endangered Species Recovery Plan for the Maryland Darter in the Deer Creek Watershed. The Plan will be implemented in conjunction with the State of Maryland and will emphasize the use of conservation agreements along the shoreline of the Darter's known habitat and the enforcement of water quality regulations regarding point and nonpoint discharges into Deer Creek to avoid any degradation of water quality in Deer Creek.

STATE THREATENED AND ENDANGERED SPECIES REGULATIONS

The State's Threatened and Endangered Species regulations prohibit the taking, export, sale or offering for sale, delivery, carrying, transport, or shipping by any means of Threatened or Endangered Species or Species in Need of Conservation without a special permit from the Department of Natural Resources.

MARYLAND NATURAL HERITAGE PROGRAM

The Maryland Natural Heritage Program was established in 1979 by the Maryland Department of Natural Resources in cooperation with the Nature Conservancy to identify the State's significant natural areas and set practices for their protection. The program mandates a continuously updated inventory on the State's natural areas and plant and wildlife species, particularly rare, threatened and endangered species and unique and exemplary natural communities. Plant and wildlife species are ranked according to their rarity in accordance with the Natural Heritage classification system. This inventory provides the information that can be used by the State and private conservation groups to protect the habitats of rare species and exemplary communities through a variety of methods, including acquisition, conservation easements, and voluntary landowner agreements.

MARYLAND ENVIRONMENTAL TRUST CONSERVATION EASEMENT PROGRAM

The Maryland Environmental Trust is a semi-autonomous unit, administratively located in the Maryland Department of Natural Resources. The purpose of the trust is to conserve and improve the State's environment, including its land, water, air, wildlife, scenic, and open space resources. Through educational and other media, the Trust encourages and motivates the populace of the State, and promotes continuing interest, in perpetuating the aesthetic, natural, scenic, and cultural qualities of the State's environment.

The Trust also:

- acquires and maintains properties of aesthetic, scenic, cultural value or of value to the public health and welfare, by gift, purchase, or bequest;
- receives appropriations, gifts, or bequests to carry out its purpose;

PART C SIGNIFICANT PLANT & WILDLIFE HABITATS

I. REQUIREMENTS OF THE CRITICAL AREA CRITERIA

In addition to Threatened and Endangered Species habitat, the Criteria identify several other types of areas of such significant plant and wildlife habitat value that they should be protected. These are:

- colonial water bird nesting sites;
- historic aquatic waterfowl staging and concentration areas;
- riparian forests and other areas utilized as breeding areas by forest interior dwelling species;
- Natural Heritage Areas; and
- plant and wildlife habitat determined to be of local significance.

The Criteria require somewhat different protective measures for each of the above types of area, recognizing their different characteristics. For colonial waterbird nesting areas, a sufficient buffer is to be established so that their nesting sites are protected from the adverse impacts of development activities and from disturbance during the breeding season. For aquatic waterfowl staging and concentration areas, new water-dependent facilities are to be located so as to avoid disturbances to such areas. For riparian forests and other forested areas utilized as breeding areas by forest interior dwelling species of birds and other wildlife species, development activities or the clearing or cutting of trees that might occur in such areas are to be conducted so as to conserve their value as habitat for forest interior dwelling species and other significant wildlife species. Natural Heritage Areas are to be protected from alteration due to development activities or cutting or clearing so that the structure and species composition of the areas are maintained. Appropriate measures are to be implemented to ensure that protection of plant and wildlife habitats of local significance are provided.

II. SIGNIFICANT ISSUES AND FACTORS

For each type of plant and wildlife habitats listed above the issues are the same. The first issue is to identify their location and the second, to develop appropriate protection programs for them. The approaches proposed to be taken with respect to each of these issues for each type of habitat area are discussed below.

COLONIAL WATERBIRD NESTING SITES

Certain types of herons, egrets, terns and the glossy ibis nest in colonies. Although a number of colonial waterbird nesting sites have been identified in the Chesapeake Bay area, none have been found to date in the area under the jurisdiction of Harford County. A heron rookery exists on Aberdeen Proving Grounds, and a least tern colony exists on an island in Susquehanna Flats that is under the jurisdiction of the U.S. Fish and Wildlife Service.

Because the populations of these species have declined dramatically throughout the Eastern United States, protection of any sites found in Harford County is important.

Such species are very sensitive to disturbance during the breeding season. Thus, the following management measures should be instituted for any colonial waterbird nesting sites that may be found in Harford County's Critical Area:

- A minimum one mile protection area buffer shall be established around any identified colonial waterbird nesting sites within which development activities or other disturbances shall be prohibited unless through a site-specific study prepared in conjunction with the State of Maryland Department of Natural Resources, it can be shown that the development activity or other disturbance will not have or cause adverse impacts on the identified habitats. Any development activities or other disturbances that are allowed should not occur during the nest building and incubation periods, approximately February through April.
- During February through April, noise from development activities should be minimized in areas adjacent to the buffer in order to avoid adverse impacts on nesting colonial waterbirds.

AQUATIC HISTORIC WATERFOWL STAGING AND CONCENTRATION AREAS

The basic source of information on the location of areas used by waterfowl in Harford County's Critical Area is the publication, "Environmental Sensitivity Index: An Atlas Illustrating the Sensitivity of the Coastal Environment to Spilled Oil" (1981, College of William and Mary, Virginia Institute of Marine Science). Within this Atlas are maps that show locations of oil spill-sensitive waterfowl species. The Department of Natural Resources, Resource Conservation Service has mapped the general locations of the historic waterfowl staging and concentration areas for the State of Maryland. This mapped information has been incorporated into the Critical Area Natural Resource Maps for Harford County's Critical Area Management Program, as shown in Figures 13 and 14.

In addition, the above-referenced report lists the following areas and waterfowl species for Harford County:

"The following waterfowl species have been found to winter along the Susquehanna River from Conowingo Dam to Havre de Grace: mallards, black ducks, American goldeneyes, and common mergansers. These species are also common in the Susquehanna River and Susquehanna Flats during the fall, as are Canada geese. Canada geese, mallards, and black ducks are also common wintering species in the Swan Creek area, and in adjoining open waters of the Chesapeake Bay. Wood ducks presumably breed near the large tidal marshes to the north of Swan Creek, where they are found from spring to fall. Year-round waterfowl species present in the Bush River from Belcamp south into the waters surrounded by Aberdeen Proving Ground include mallards, black ducks, ring-necked ducks, American goldeneyes, and Canada geese. From spring to fall, wood ducks are found in the Otter Point marsh area, the wetlands north of

Highway 40 near McComas and Van Bibber, and along Winter's Run from McComas to Atkisson Reservoir. Waterfowl species that commonly winter in open water areas south of Joppatowne include mallards, black ducks, American widgeons, Canada geese, and tundra (whistling) swans. In addition, wood ducks winter along the Little Gunpowder River from Highway 40 to the Gunpowder River, and south from this area to Days Cove and Rumsey Island."

Adequate protection will generally be given to the waterfowl in such areas by the maintenance of the Critical Area Buffer and the measures implemented to protect nontidal wetlands. The only additional measure needed is to prohibit the location of new water-dependent facilities in or adjacent to areas used by waterfowl as wintering or staging areas unless it is unavoidable. In addition, the use of any water-dependent facilities presently located in such areas or those that must be placed in such areas in the future should be limited during the period of November through March to avoid disturbance of waterfowl wintering there or using them as migratory staging areas.

RIPARIAN FORESTS AND OTHER FORESTED AREAS UTILIZED BY FOREST INTERIOR DWELLING SPECIES

As noted above, two types of forested areas are identified in the Criteria as of particular importance because of their value as wildlife habitat, particularly for forest interior dwelling birds (those species of birds that require relatively large forested tracts to breed successfully). These are existing riparian forests (e.g., relatively mature forests of at least 300 feet in width that occur adjacent to streams, wetlands or the Bay shoreline and which are documented breeding areas), and large forested areas utilized as breeding areas by forest interior dwelling species (e.g., relatively mature forested areas of 100 acres or more or forest connected to such areas). These forests have been mapped as shown in Figures 13 and 14.

FIGURE 13

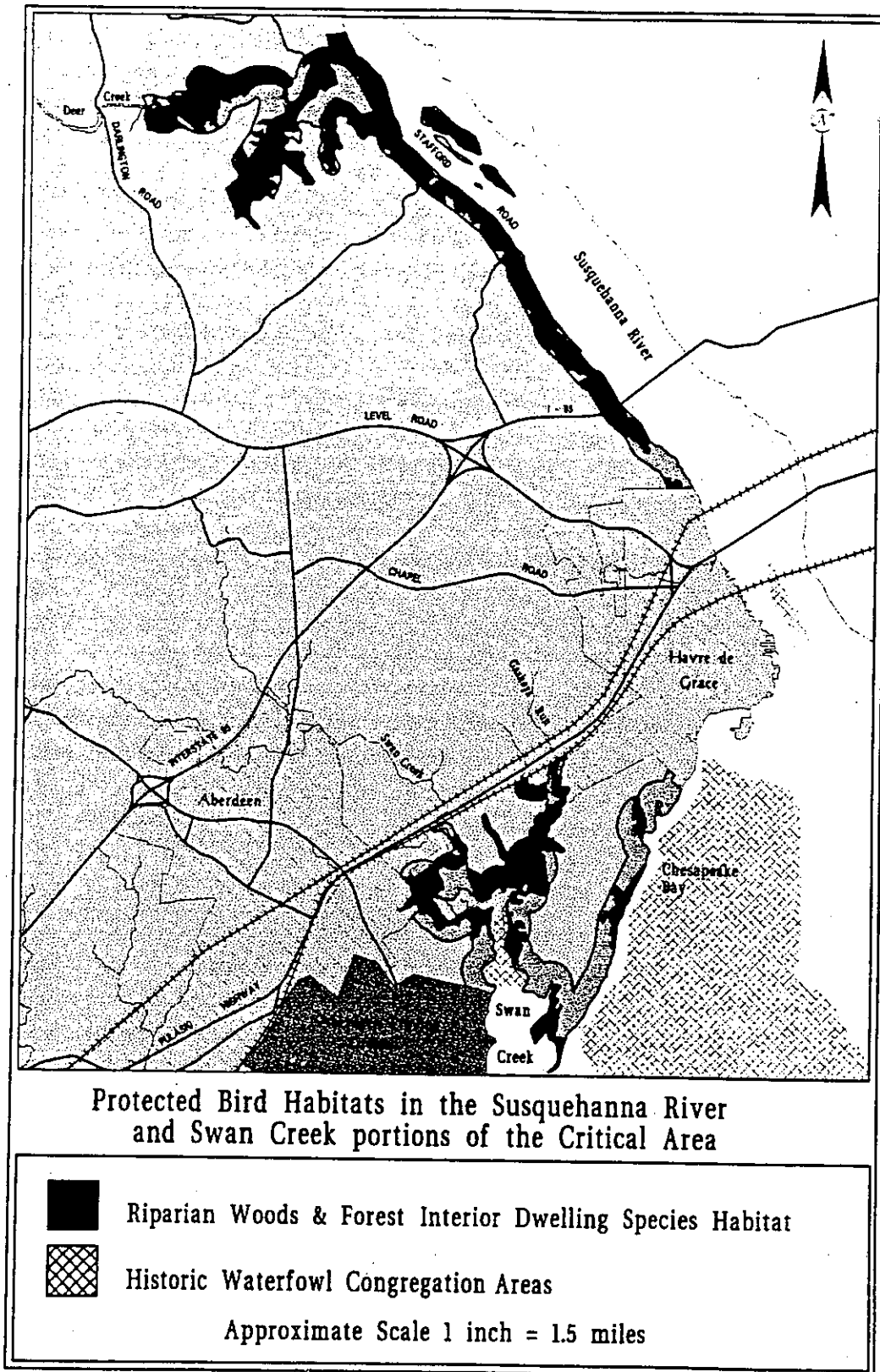
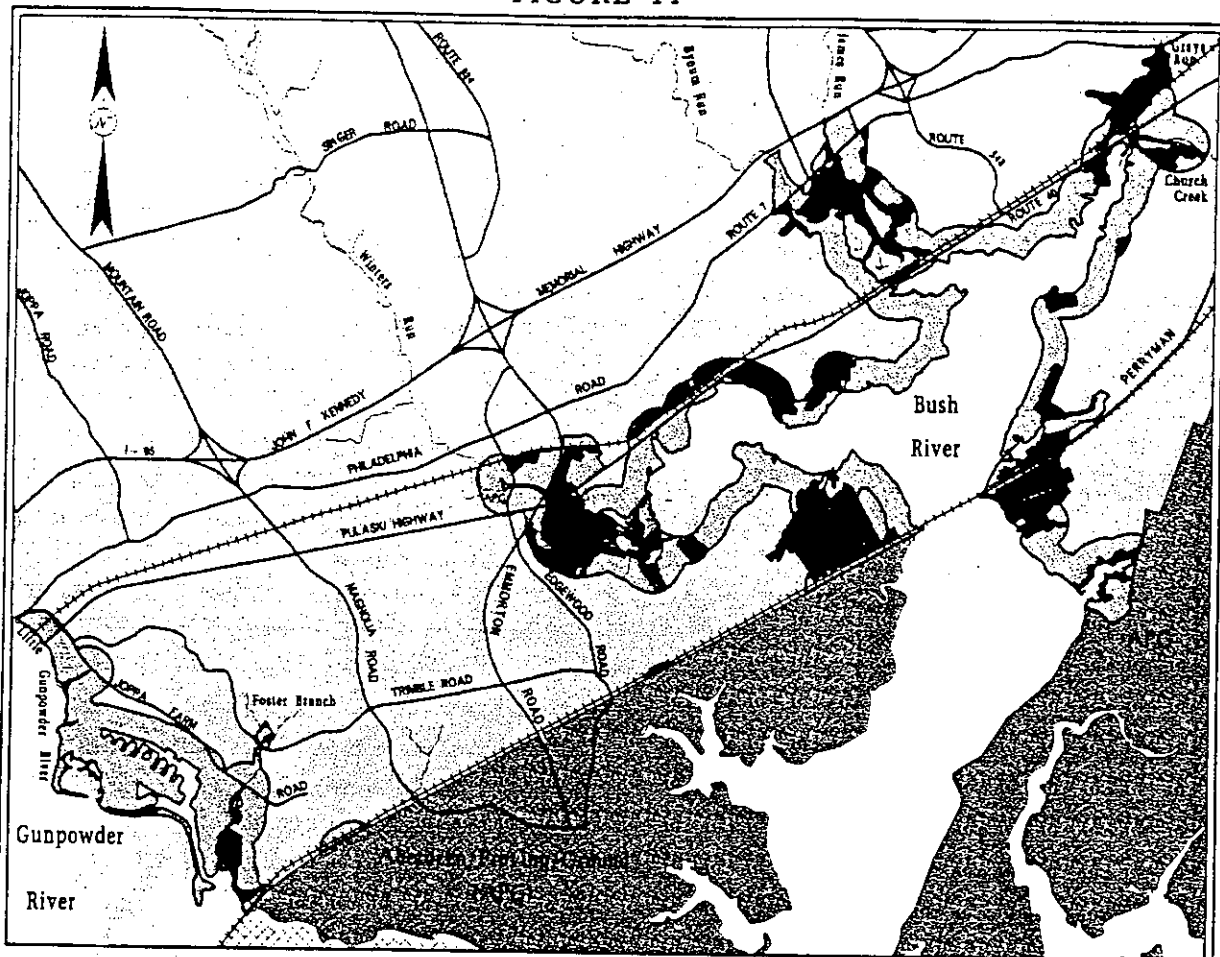


FIGURE 14



Protected Bird Habitats in the Gunpowder River
and Bush River portions of the Critical Area



Riparian Woods & Forest Interior Dwelling Species Habitat



Historic Waterfowl Congregation Areas

Approximate Scale 1 inch = 1.5 miles

Table 9-1 lists those bird species considered to be forest interior dwelling species. The species marked with an asterisk are uncommon and highly sensitive to disturbance; thus, the presence of these species is a significant indication of high quality habitat. Confirmation of the presence of these species and the other species on the list can only be made by site surveys undertaken during the breeding season using approved survey methods such as those being used to develop the State Breeding Bird Atlas (see Appendix N for a detailed discussion of approved survey methods). For an area to be considered a significant forest interior dwelling species habitat, the breeding of one sensitive species, or four other species, must be documented.

However, forest areas likely to contain such species can be identified by their size, location and tree species composition. The locations of such potential areas have been mapped on the Natural Features Maps Overlay to the County's tax maps. The identification of forested areas as forest interior dwelling species habitat does not mean that no development or cutting or clearing of trees can occur, but that it must be done in a manner that preserves the forest's value as habitat for such species. Thus, the following management practices should be applied to such areas:

- Minimize disturbance during the May-August breeding season (i.e., from off-road vehicles, intensive public use, or logging);
- Locate development or other activities that would cause disturbance to the forested areas on the periphery of the area (i.e., roads, utility line corridors, structures, intensive timber harvesting, etc.);
- Retain the continuous cover of branches and foliage that is formed by the crowns of adjacent trees (e.g., the forest canopy) and trees and shrubs underneath the canopy;
- Retain standing dead trees (e.g., snag trees) which serve as bird nesting and feeding habitats;
- Avoid the creation of small clearings and the disproportionate expansion of forest edge habitat;
- Any significant forest area that is temporarily cleared should be permitted, or encouraged, to return to native forest vegetation; and
- Any timber harvesting that is undertaken in such areas should utilize techniques that maintain or improve habitat for forest interior dwelling species.

Alteration to areas identified as potential forest interior dwelling species habitat should be delayed until breeding bird surveys can be done for the area, otherwise, the assumption should be made that such habitat is present and appropriate management practices are followed.

NATURAL HERITAGE AREAS

In order for an area to be designated as Natural Heritage Area, it must: contain one or more threatened or endangered species or wildlife species in need of conservation; be a unique blend of

geological, hydrological, climatological or biological features, and be among the best statewide examples of its kind. No Natural Heritage Areas have been presently designated in Harford County's Critical Area. Should an area be identified, it is expected that the same management approach will be followed as the one proposed for Habitats of Threatened and Endangered Species and Species in Need of Conservation. Whenever possible, this would include development of protection programs in cooperation with the land owner for the retention of the area in a natural state wherever possible, complemented by review of proposed activities on adjacent properties for their possible impacts on the Natural Heritage Area. The cooperative protection program will be implemented through the use of conservation easements, cooperative management agreements with the land owner and similar measures.

TABLE 9-1

LIST OF BIRD SPECIES OBSERVED IN HARFORD COUNTY

*indicates forest interior dwelling species (FIDS)

**indicates FIDS especially sensitive to disturbance

Red-throated loon		Thayers gull
Common loon		
Horned grebe	Osprey	
Double-crested cormorant	Bald eagle	
American bittern	Northern harrier	Great black-backed gull
Least bittern	Sharp-shinned hawk	Caspian tern
Great blue heron	Coopers hawk	Royal tern
Great egret	**Red-shouldered hawk	Common tern
Snowy egret	**Broad-winged hawk	Forster's tern
Little blue heron	Red-tailed hawk	Least tern
Cattle egret	Rough-legged hawk	Rock dove
Green-backed heron	American kestrel	Mourning dove
Black-crowned night heron	Merlin	Black-billed cuckoo
Glossy ibis	Peregrine falcon	Yellow-billed cuckoo
Tundra swan	Ring-necked pheasant	Barn Owl
Mute swan	Wild turkey	Eastern screech owl
Gr. white-fronted goose	Northern bobwhite	Great horned owl
Snow goose	King rail	**Barred owl
Canada goose	Virginia rail	Long-eared owl
Wood duck	Common moorhen	Short-eared owl
Green-winged teal	American coot	Snowy owl
American black duck	Black-bellied plover	Northern saw-whet owl
Mallard	Semipalmated plover	Common nighthawk
Northern pintail	Killdeer	*Whip-poor-will
Blue-winged teal	Greater yellowlegs	Chimney swift
Northern shoveler	Lesser yellowlegs	Ruby-thrd. hummingbird
Gadwall	Solitary sandpiper	Belted kingfisher
American Wigeon	Spotted sandpiper	Red-headed woodpecker
Canvasback	Upland sandpiper	Red-bellied woodpecker
Redhead	Semipalmated sandpiper	Yellow-bellied sapsucker
Ring-necked duck	Least sandpiper	Downy woodpecker
Greater scaup	Pectoral sandpiper	*Hairy woodpecker
Lesser scaup	Dunlin	Northern flicker
Oldsquaw	Short-billed dowitcher	*Pileated woodpecker
Common goldeneye	Common snipe	Eastern wood pewee
Bufflehead	American woodcock	Yellow-bellied flycatcher
Hooded merganser	Laughing gull	*Acadian flycatcher
Common merganser	Bonaparte's gull	Willow flycatcher
Red-breasted merganser	Ring-billed gull	Least flycatcher
Ruddy duck	Herring gull	Eastern phoebe
Black vulture	Iceland gull	Great-crested flycatcher
Turkey vulture	Lesser black-backed gull	Eastern kingbird
	Glaucous gull	Horned lark

Table 9-1, continued

Hooded warbler	Tennessee warbler	Fox sparrow
Purple martin	Nashville warbler	Song sparrow
Tree swallow	*Northern parula	Swamp sparrow
N. rough-winged swallow	Yellow warbler	White-throated sparrow
Bank swallow	Chestnut-sided warbler	White-crowned sparrow
Cliff swallow	Magnolia warbler	Dark-eyed junco
Barn swallow	Cap May warbler	Lapland longspur
Blue jay	Bk-throated blue warbler	Snow bunting
American crow	Yellow-rumped warbler	Bobolink
Fish crow	**Bk-throated green warbler	Red-winged blackbird
Black-capped chickadee	Blackburnian warbler	Eastern meadowlark
Carolina chickadee	Yellow-throated warbler	Rusty blackbird
Tufted titmouse	Pine warbler	Common Grackle
Red-breasted nuthatch	Prairie warbler	Brownheaded cowbird
White-breasted nuthatch	Palm warbler	Orchard oriole
**Brown creeper	Bay-breasted warbler	Northern oriole
Carolina wren	Blackpoll warbler	Purple finch
House wren	**Cerulean warbler	House finch
Winter wren	*Black-and-white warbler	Pine siskin
Marsh wren	**American redstart	Common redpoll
Gold-crowned kinglet	*Prothonotary warbler	American goldfinch
Ruby-crowned kinglet	**Worm-eating warbler	Evening grosbeak
Blue-gray gnatcatcher	*Ovenbird	House sparrow
Eastern bluebird	Northern waterthrush	**Swainson's Warbler
*Veery	**Louisiana waterthrush	
Gray-cheeked thrush	**Kentucky warbler	
Swainson's thrush	Connecticut warbler	
Hermit thrush	Mourning warbler	
*Wood thrush	Common yellowthroat	
American robin	**Hooded warbler	
Gray catbird	Wilson's warbler	
Northern mockingbird	Canada warbler	
Brown thrasher	Yellow-breasted chat	
American pipit	*Scarlet tanager	
Cedar waxwing	Northern cardinal	
Loggerhead shrike	Rose-breasted grosbeak	
European starling	Blue grosbeak	
White-eyed vireo	Indigo bunting	
Solitary vireo	Rufous-sided towhee	
*Yellow-throated vireo	American tree sparrow	
Warbling vireo	Chipping sparrow	
Philadelphia vireo	Field sparrow	
*Red-eyed vireo	Vesper sparrow	
Blue-winged warbler	Savannah sparrow	
Golden-winged warbler	Grasshopper sparrow	

HABITATS OF LOCAL SIGNIFICANCE

Habitats of Local Significance are those habitats that may not be of significance statewide, but are significant locally because, for instance, they contain a unique blend of geological, hydrological, climatological or biological features, and are among the best county-wide examples of their kind. Harford County, with the assistance of the Maryland Natural Heritage Program, has identified several sites appropriate for such designation in its Critical Area. They contain a rare blend of biological features and contain or have the potential of containing habitats of rare or threatened species. Sites are located along the shores of the Susquehanna River, in the Perryman area near Aberdeen Proving Grounds, the Willoughby Beach peninsula, and along Pulaski Highway near Church Creek. A detailed description of each site can be found in Appendix M. The location of each Habitat of Local Significance has been mapped in the Habitats of Local Significance Maps.

Since these areas contain sensitive natural features, activities proposed in or adjacent to them need to be carefully reviewed to avoid adverse impacts to such areas. Whenever possible, cooperative protection programs will be developed with the land owners of the sites in question and complemented by review of projects proposed in or adjacent to such sites through the development review process, Forest Management Plans and Soil and Water Conservation Plans where pertinent.

The designation of an area as a Habitat of Local Significance is not intended to restrict noncommercial passive recreation activities such as hiking and nature photography. These activities are likely to have little adverse impact to the sites, and are therefore considered to be allowable uses. On the other hand, active recreation activities, including the use of off-road vehicles, have potential to cause damage to the sensitive areas of the sites, and therefore should be prohibited.

Harvesting of timber for both personal and commercial uses can be undertaken in the designated Habitats of Local Significance, provided that such harvesting does not alter the existing vegetative structure and/or change the existing species composition of a site. Such harvesting will have to be conducted in such a manner that disturbance to sensitive areas of the sites, including nontidal wetlands, is avoided. Logging roads, for instance, should be located away from these sensitive areas. Such harvesting should also not adversely affect the habitat value of the sites for forest interior dwelling bird species, where it presently exists. Protection of the sensitive features of a site will be ensured through the requirement that a Forest Management Plan be developed for any timber harvesting on such areas by a registered, professional forester and approved by the Maryland Forest Service and the Harford County Department of Planning and Zoning.

If any additional Habitats of Local Significance are identified in the future, a similar management approach will be taken. Also, consideration will be given to the protection of any similar areas found in the remainder of the County through revision of the provisions of the Natural Resources Overlay District.

III. FEDERAL, STATE AND LOCAL REGULATIONS AND MANAGEMENT PROGRAMS

MARYLAND ENVIRONMENTAL TRUST CONSERVATION EASEMENT PROGRAM

As discussed in the previous section on Threatened and Endangered Species and Species in Need of Conservation, the Maryland Environmental Trust administers voluntary conservation easement programs. Through this program, land owners give up their development rights on environmentally sensitive portions of their properties in exchange for tax benefits.

ENVIRONMENTAL LAND PRESERVATION COMMISSION BILL

In 1994, Harford County adopted legislation that provides a property tax credit of up to \$500 a year for landowners who preserve environmentally sensitive or environmentally valuable lands through easement or donation to a qualified conservation organization.

IV. MODIFICATIONS MADE TO STATE AND LOCAL REGULATIONS AND MANAGEMENT PROGRAMS

Harford County has established a plant and wildlife habitat protection program for the various types of plant and wildlife habitats discussed above. Activities proposed in or adjacent to such areas will be reviewed for potential adverse impacts in accordance with the pertinent provisions of the revised Subdivision Regulations and Chesapeake Bay Critical Area Overlay District that were discussed previously in Chapter 2. Forestry operations and agricultural activities will be undertaken in accordance with Forest Management Plans and Soil and Water Conservation Plans that contain provisions providing protection for areas identified as significant plant and wildlife habitat.

Where the development of detailed management programs for specific sites is appropriate such as for areas designated as Habitats of Local Significance, the assistance of the Maryland Department of Natural Resources, will be sought.

PART D. ANADROMOUS FISH PROPAGATION WATERS

I. REQUIREMENTS OF THE CRITICAL AREA CRITERIA

Anadromous fish propagation waters are defined by the Criteria as "those streams that are tributary to the Chesapeake Bay where spawning of anadromous species of fish (e.g., rockfish, yellow perch, white perch, shad, and river herring) occurs or has occurred." Such streams were designated by the Tidewater Administration. The Criteria establish the following objectives for local Critical Area Management Programs with respect to anadromous fish:

- Protect the instream and streambank habitat of anadromous fish propagation waters;
- Promote land use policies and practices in the watershed of spawning streams within the

Critical Area that will minimize the adverse impacts of development on the water quality of the streams; and

- Provide for the unobstructed movement of spawning and larval forms of anadromous fish in streams.

To achieve the objectives, local governments are to ensure that:

- The installation or introduction of concrete riprap or other artificial surfaces onto the bottom of natural streams is prohibited, unless it can be demonstrated that water quality and fisheries habitat will be improved;
- Channelization or other physical alterations that may change the course or circulation of a stream and thereby interfere with the movement of fish is prohibited; and
- Adverse impact on anadromous fish spawning streams from activities occurring in their watersheds are to be minimized. Local jurisdictions are encouraged to adopt land use policies and programs in watersheds outside the Critical Area to minimize the impacts of any activities on anadromous fish spawning streams.

In addition, the Criteria require that local governments make use of the following complementary State laws and regulations:

- The construction or placement of dams or other structures that would interfere with or prevent the movement of spawning fish or larval forms in streams shall be prohibited. If practical, the removal of existing barriers shall be effected (COMAR 08.05.03.02).
- Local jurisdictions shall assure that the construction, repair, or maintenance activities associated with bridges, or other stream crossings or with utilities and roads, which involve disturbance within the Buffer or which occur instream, as described in COMAR 08.08.03.09B(4) shall be prohibited between March 1 and June 15.

II. SIGNIFICANT ISSUES AND FACTORS

The major issues associated with anadromous fish propagation waters are: identification of those streams designated as anadromous fish propagation waters, and establishment of measures to ensure protection of anadromous fish spawning streams from adverse impacts resulting from activities occurring in those streams or in their watersheds.

IDENTIFICATION OF ANADROMOUS FISH SPAWNING STREAMS IN HARFORD COUNTY

According to the Tidewater Administration at the time during which the Critical Area Management Program was first developed, all perennial streams in Harford County's Critical Area should be considered anadromous fish spawning streams. As a result, such streams have not been mapped due

to their pervasive nature. Their approximate location can be identified by reference to the U.S.G.S. 7" quad maps or the Harford County Soil Survey. Identification of the exact location of any streams located on a proposed site will be required as part of the County's development review process.

IMPLEMENTATION OF APPROPRIATE PROTECTION MEASURES

Implementation of the other requirements of the Critical Area Criteria should generally provide adequate protection to anadromous fish spawning streams. Among the most pertinent requirements are those relating to establishment of the 100-foot Critical Area Buffer, protection of nontidal wetlands and other Habitat Protection Areas. Implementation of the recommendations of the County's Sediment Control and Stormwater Management Evaluation Study discussed in Chapter 2 should address the requirement for minimizing impacts on anadromous fish spawning streams due to activities occurring in their watersheds. With regard to extending protection of anadromous fish spawning streams beyond the Critical Area, it should be noted that the County's Natural Resources District Ordinance is applicable countywide. That ordinance requires a minimum 75-foot natural buffer along streams, restriction of development on steep slopes and soils with development constraints, and requires activities proposed to be undertaken near streams be done so in a manner that would minimize their adverse environmental impacts.

III. FEDERAL, STATE AND LOCAL REGULATORY AND MANAGEMENT PROGRAMS

STATE WATERWAY CONSTRUCTION/OBSTRUCTION PERMIT

Any activity that occurs in a free flowing stream with a watershed of 400 acres or more (or 100 acres or more in the case of trout streams) requires a Waterways Construction/Obstruction Permit from the Maryland Department of the Environment. The required conditions for such a permit require that all bridges and culverts be constructed so as not to adversely affect fish habitat and migration patterns, and that the construction of proposed projects that may adversely affect anadromous fish spawning areas is prohibited from March 1 through June 15.

NATURAL RESOURCES DISTRICT

As noted previously, outside of the Critical Area the County's Natural Resources District provides for maintenance of a natural buffer adjacent to streams in the County, protection of significant environmental features such as nontidal wetlands and the minimization of the potentially adverse impacts of activities undertaken near streams.

IV. MODIFICATIONS MADE TO LOCAL REGULATIONS AND MANAGEMENT PROGRAMS

As discussed above, the measures that will be instituted to address other parts of the Criteria should generally provide adequate protection to anadromous fish propagation waters. In addition, the

Critical Area Ordinance requires that a condition of approval for any proposed development in the Critical Area for construction, repair or maintenance associated with bridges or other stream crossings or with utilities and roads that occur instream or involve disturbance within the Buffer not be undertaken during the period between March 1 and June 15. All proposed instream construction projects shall maintain the natural stream channel bottom and predevelopment conditions.

PART E. NONTIDAL WETLANDS

In addition to the Habitat Protection Areas specified in COMAR 27.01.09, Harford County implements a nontidal wetlands protection program based upon the provisions in the Natural Resources District transferred in slightly modified form to the new Chesapeake Bay Critical Area Overlay District, and appropriate provisions to be included in Soil and Water Conservation Plans for agricultural areas that may contain nontidal wetlands. Table 9-2 lists the positive indicators for wetlands of special importance.

In the Chesapeake Bay Critical Area Overlay District, the ordinance language prohibits alteration of nontidal wetlands of 40,000 square feet or greater, as well as requiring the retention of a 75-foot buffer around them. An estimation of the location of wetlands is provided by the Harford County Soil Survey (Soil Conservation Service, 1972). Hydric soils and soils that have hydric inclusions are listed in Table 9-3. Protection will also be provided to nontidal wetlands regardless of their size that are found to be hydrologically connected through surface or subsurface flow to streams, tidal waters, and/or determined to be of special importance to fish, wildlife or plant habitat by appropriate federal, State and local agencies.

The location of stormwater management measures in nontidal wetlands will be limited to those for which there is no other viable location and whose water quality benefits outweigh the adverse impacts on the water quality and plant and wildlife habitat values of the nontidal wetlands affected. In determining the adverse impacts of the location of such facilities, consideration will be given to the compensatory value of mitigation measures proposed to replace the lost water quality and habitat value of the affected nontidal wetlands. Any stormwater management measures constructed will be required to be undertaken in a manner that minimizes their adverse impact on the nontidal wetland in question.

TABLE 9-2

POSITIVE INDICATORS OF NONTIDAL WETLANDS OF SPECIAL IMPORTANCE

The following indicators indicate a high probability of special importance:

- Wetlands complexes: the area contains two or more contiguous wetland types;
- Special soil type: wetlands (excluding those dominated by loblolly pine) have a high probability of being of special importance when they occur on the following soil types: Elkton, Muck, Evesboro-Goldstown (these soils are often well drained, however, when a wetland is present, the area should be examined.);
- Wetlands in sand/gravel pits abandoned over five years ago;
- Seep wetlands, which are indicated by a wetter water regime than adjacent areas, muck or peat soils, or with at least a 70% cover of sphagnum moss. Good indicator plant species include:

Common Name	Latin Name
Skunk cabbage	<i>Symplocarpus foetidus</i>
Follicled sedge	<i>Carex folliculata</i>
Marsh marigold	<i>Caltha palustris</i>
Canada mayflower	<i>Maianthemum canadensis</i>
Wood anemone	<i>Anemone quinquefolia</i> ;

- Forested wetlands dominated by large trees (greater than 24" dbh) with less than 30% herbaceous cover in exotic species. Such exotic species include:

Common Name	Latin Name
Japanese honeysuckle	<i>Lonicera japonica</i>
Japanese barberry	<i>Berberis thunbergii</i>
Japanese knotweed	<i>Polygonum cuspidatum</i>
Kudzu vine	<i>Pueraria lobata</i>
Asiatic knotweed	<i>Polygonum perfoliatum</i>
Daylily	<i>Hemerocallis fulva</i>
Multiflora rose	<i>Rosa multiflora</i>
Privet	<i>Ligustrum spp.</i>
Garlic mustard	<i>Alliaria officinalis</i>
Autumn/Russian Olive	<i>Eleagnus spp.</i>
Purple loosestrife	<i>Lythrum salicaria</i>
Common Reed	<i>Phragmites australis</i> ;

- Forested wetlands with shrub and herbaceous cover of at least 30%. Indicates well-defined vegetation layers with high diversity (see number one above);
- Forested or Scrub-shrub wetlands over one acre in size;
- Wetlands associated with extensive forested tracts, such as may be used by interior dwelling bird species;
- Bogs - highly acidic wetlands characterized by peat, or a floating mat of vegetation, and Sphagnum. They often occur adjacent to old millponds and in old sand/gravel pits; and
- Forested wetlands with vernal pools (seasonal ponds).

TABLE 9-3
HYDRIC SOILS OF HARFORD COUNTY, MARYLAND

Hydric Soil Mapping Units

<u>Map Symbol</u>	<u>Mapping Unit</u>
Av	Alluvial
BaA	Baile silt loam
BaB	Baile silt loam
En	Elkton silt loam
Fs	Fallsington loam
Hb	Hatboro silt loam
KrA	Kinkora silt loam
KrB	Kinkora silt loam
Lr	Leonardtown silt loam
Ot	Othello silt loam
Sw	Swamp
Tm	Tidal Marsh
WaA	Watchung silt loam
WaB	Watchung silt loam
WcB	Watchung very stony silt

Mapping Units with Potential Hydric Soil Inclusions

<u>Map Symbol</u>	<u>Mapping Unit</u>	<u>Hydric Components</u>
AdA	Aldino silt loam	Watchung inclusions
AdB	Aldino silt loam	Watchung inclusions
AdC	Aldino silt loam	Watchung inclusions
AsB	Aldino very stony	Watchung inclusions
BeA	Beltsville silt loam	Leonardtown inclusions
BeB	Beltsville silt loam	Leonardtown inclusions
BeC	Beltsville silt loam	Leonardtown inclusions
Cu	Codorus silt loam	Hatboro inclusions
DcA	Delanco silt loam	Unnamed inclusions
DcB	Delanco silt loam	Unnamed inclusions
GnA	Glenville silt loam	Baile inclusions
GnB	Glenville silt loam	Baile inclusions
KeB	Kelly silt loam	Watchung inclusions
KeC2	Kelly silt loam	Watchung inclusions
KfD	Kelly very stony silt loam	Watchung inclusions
KpA	Keyport silt loam	Elkton inclusions
KpB	Keyport silt loam	Elkton inclusions
MIa	Mattapex silt loam	Othello inclusions
MIb	Mattapex silt loam	Othello inclusions
Sa	Sand and Gravel Pits	Unnamed inclusions
WoB	Woodstown loam	Fallsington inclusions

SOURCE: U.S. Dept. of Agriculture, Soil Conservation Service, in cooperation with Maryland Agricultural Experiment Station. 1973. Soil Survey of Harford County Area, Maryland. Cartographic Division, SCS, USDA. 188 pp., plus maps.

Provision will also be made to allow the construction of water-dependent facilities that may adversely affect nontidal wetlands if such impacts are necessary and unavoidable and if appropriate mitigation measures are undertaken. Similarly, the location of roads, utilities and bridges in nontidal wetlands will be allowed only if no feasible alternative exists and impacts are minimized and are appropriately mitigated.

IV. EXISTING REGULATORY AND MANAGEMENT PROGRAMS

FEDERAL REGULATORY PROGRAMS

CLEAN WATER ACT

Under Section 404 of the Clean Water Act, the Corps of Engineers regulates the discharge of dredge or fill material into the waters and wetlands of the U.S., subject to oversight by the Environmental Protection Agency (EPA). The EPA maintains final authority in defining the extent of wetlands and if it determines that a discharge will have unacceptable impacts on municipal water supplies, shellfish and fishery areas, wildlife, and recreation, the EPA can veto issuance of the Corps permit. The U.S. Fish and Wildlife Service provides advisory comments to the Corps of Engineers regarding proposed projects that may affect nontidal wetlands or water bodies. Under Section 401 of the Clean Water Act, the Department of the Environment is delegated authority to administer water quality certification programs through which it reviews all projects involving discharges into wetlands and the State's waters for potential adverse impacts.

FARM BILL OF 1985 (FOOD SECURITY ACT) TITLE XII SECTION E ("SWAMPBUSTER")

As noted in the chapters on agricultural activities, the Department of Agriculture is to withhold benefits such as farm loans and crop insurance from farmers who convert wetlands for agricultural use subsequent to passage of this Act.

EXISTING STATE PROGRAMS

WATERWAY CONSTRUCTION PERMITS

The Waterway Permits Division of the Maryland Department of the Environment, issues waterway construction permits for work (including construction, fill, or placement of structures) in a stream or its 100-year floodplain. Areas that drain less than 400 acres, or agricultural drainages less than 2,500 acres are exempt. Regulations passed in 1986 (COMAR .08.05.03.11) require applicants to mitigate, replace, or minimize loss of habitat when there is no reasonable alternative to causing adverse effects on nontidal wetlands.

COASTAL ZONE MANAGEMENT PROGRAM CONSISTENCY DETERMINATIONS

The Coastal Zone Consistency Division of the Maryland Department of the Environment, issues

recommendations and makes consistency determinations to other State and federal agencies on projects affecting the State's Coastal Zone (which includes Baltimore City and the counties that border the Chesapeake Bay, Potomac River and Atlantic Ocean).

STATE NONTIDAL WETLANDS PROGRAM

As discussed in Chapter 3, the Maryland Department of the Environment (MDE), reviews and evaluates permits for impacts to nontidal wetlands through the 404 Joint Application process with the Army Corps of Engineers. MDE has authority to issue or deny State Wetlands Permits. In addition, MDE provides technical assistance and training to State and local governmental agencies on issues involving nontidal wetlands.

